Fantom G6
Fantom G7
Fantom G8

SERVICE NOTES
Issued by RJA

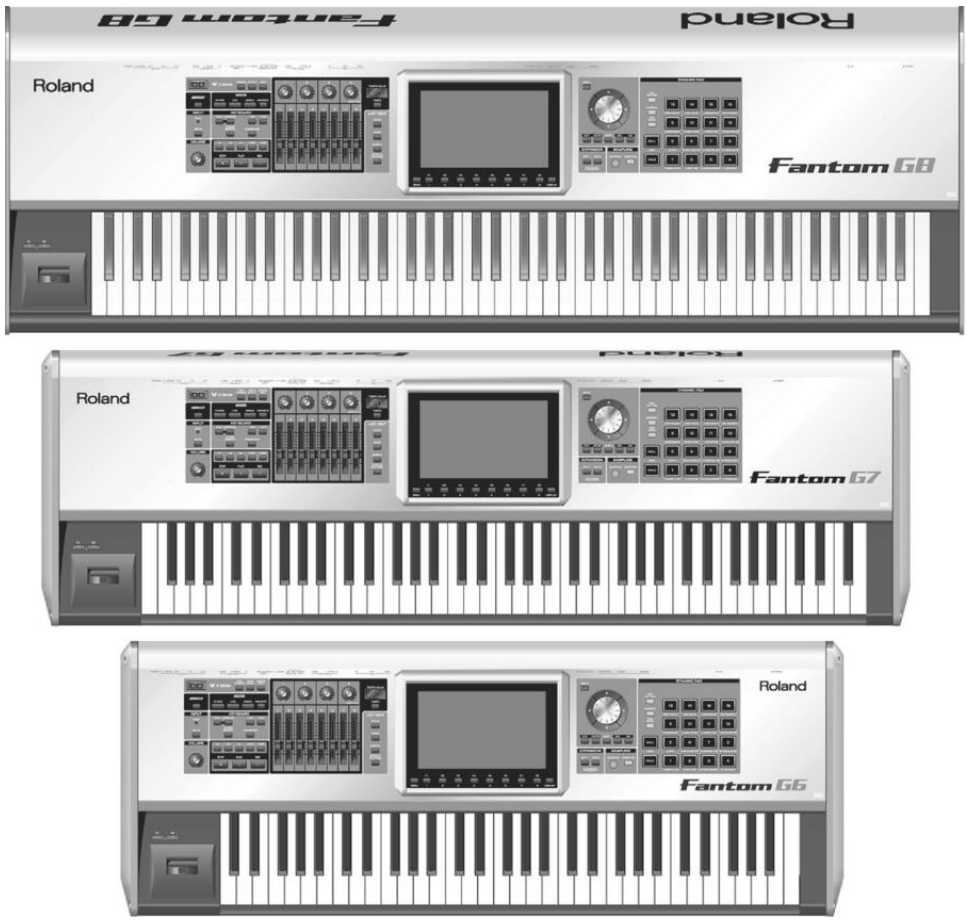

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Table of Contents

Cautionary Notes 3
Specifications 4
Location of Controls (Top Panel) 6
Location of Controls (Top Panel) Parts List 7
Location of Controls (Rear Panel) 8
Location of Controls (Rear Panel) Parts List 8
Exploded View (All) (Fantom-G6, Fantom-G7) 10
Exploded View (All) Parts List (Fantom-G6, Fantom-G7) 11
Exploded View (1) (Fantom-G6, Fantom-G7) 12
Exploded View (1) Parts List (Fantom-G6, Fantom-G7) 13
Exploded View (2) (Fantom-G6, Fantom-G7) 14
Exploded View (2) Parts List (Fantom-G6, Fantom-G7) 15
Exploded View (3) (Fantom-G6, Fantom-G7) 16
Exploded View (3) Parts List (Fantom-G6, Fantom-G7) 17
Exploded View (All) (Fantom-G8) 18
Exploded View (All) Parts List (Fantom-G8) 19
Exploded View (1) (Fantom-G8) 20
Exploded View (1) Parts List (Fantom-G8) 21
Exploded View (2) (Fantom-G8) 22
Exploded View (2) Parts List (Fantom-G8) 23
Exploded View (3) (Fantom-G8) 24
Exploded View (3) Parts List (Fantom-G8) 25
Wiring Diagram (Fantom-G6) 26
Wiring Diagram (Fantom-G7) 28
Wiring Diagram (Fantom-G8) 30
Cautions for Connecting Wirings 32
Parts List (Fantom-G6) 34
Parts List (Fantom-G7) 38
Parts List (Fantom-G8) 42
Specifying The Main Board's Unit Model Setting 47
Verifying the Version Number 47
Saving and Loading Data 47
Factory Reset Procedure 48
System Update Procedure 48
Test Mode 49
Keyboard Parts List (Fantom-G6: SK-1061-A) 60
Keyboard Parts List (Fantom-G7: SK-1076-C) 61
Keyboard Parts List (Fantom-G8: PHA2-F) 62
Keyboard Circuit Board (Fantom-G6: SK-1061-A) 64
Keyboard Circuit Board (Fantom-G7: SK-1076-C) 66
Keyboard Assembly Procedure (Fantom-G6: SK-1061-A, Fantom-G7: SK-1076-C) 68
Keyboard Assembly Procedure (Fantom-G8: PHA2-F) 73
Block Diagram 74
Circuit Board (Main Board) 76
Circuit Diagram (Main Board: 1/8) 78
Circuit Diagram (Main Board: 2/8) 80
Circuit Diagram (Main Board: 3/8) 82
Circuit Diagram (Main Board: 4/8) 84
Circuit Diagram (Main Board: 5/8) 86
Circuit Diagram (Main Board: 6/8) 88
Circuit Diagram (Main Board: 7/8) 90
Circuit Diagram (Main Board: 8/8) 92
Circuit Board (Panel-L, Panel-C, Inverter, Inlet, After, Key Link Board) 94
Circuit Diagram (Panel-L Board) 96
Circuit Diagram (Panel-C Board) 98
Circuit Diagram (Inverter Board) 98
Circuit Diagram (Inlet Board) 98
Circuit Diagram (After Board) (only for Fantom-G8) 99
Circuit Diagram (Key Link Board) (only for Fantom-G8) 99
Circuit Board (Jack, Panel-R, Sub CPU, Bender SW, Encoder Board) 100
Circuit Diagram (Jack Board: 1/3) 102
Circuit Diagram (Jack Board: 2/3) 104
Circuit Diagram (Fantom-G6 Jack Board: 3/3) 106
Circuit Diagram (Fantom-G7 Jack Board: 3/3) 108
Circuit Diagram (Fantom-G8 Jack Board: 3/3) 110
Circuit Diagram (Panel-R Board) 112
Circuit Diagram (Sub CPU Board) 114
Circuit Diagram (Bender SW Board) 116
Circuit Diagram (Encoder Board) 116

Cautionary Notes

Before beginning the procedure, please read through this document. The matters described may differ according to the model.

Back Up User Data!

User data may be lost during the course of the procedure. Refer to "Users Data Save and Load" in the Service Notes and save the data. After completing the procedure, restore the backed-up data to the product.

Part Replacement

When replacing components near the power-supply circuit or a heat-generating circuit (such as a circuit provided with a heat sink or including a cement resistor), carry out the procedure according to the instructions with respect to the part number, direction, and attachment position (mounting so as to leave an air gap between the component and the circuit board, etc.).

Parts List

A component whose part code is ******** cannot be supplied as a service part because one of the following reasons applies.

- Because it is supplied as an assembled part (under a different part code).
- Because a number of circuit boards are grouped together and supplied as a single circuit board (under a different part code).
- Because supply is prohibited due to copyright restrictions.
- Because reissuance is restricted.
- Because the part is made to order (at current market price).

Circuit Diagram

In the circuit diagram, "NIU" is an abbreviation for "Not in Use." The circuit board and circuit board diagram show silk-screened indications, but no components are mounted.

Disassembly Procedure

- Fantom-G8 work procedures should always be performed by two or more persons, using care to avoid trapping the fingers or dropping the unit onto the feet.
- When turning the unit body over, place a stack of newspapers or magazines beneath the four corners or beneath both ends, and position the unit carefully to avoid breaking the buttons and knobs.
- When turning the unit body over, use care to prevent the unit from falling or toppling over.

ARX Series Setting Data

Installing the ARX series expansion board while performing Fantom-G6/G7/G8 repairs and inspections could alter the ARX setting data at the Fantom-G's Main Board. Moreover, the ARX setting data will be cleared if the Factory Reset is executed in the Test Mode.

In either of the above cases, the user must install the ARX in hand, then reload its setting data in order to restore the original settings. This setting data cannot be backed up by the **Saving and Loading Data** (p. 47).

For further details, refer to the **Loading ARX Series Setting Data** (p. 58).

Specifications

Fantom-G6/G7/G8: Synthesizer Keyboard (Conforms to General MIDI 2 System)

Keyboard

[G6] 61 keys (with velocity and channel aftertouch)
[G7] 76 keys (with velocity and channel aftertouch)
[G8] 88 keys (Progressive Hammer action II Mechanism, Ivory feel, and channel aftertouch)

Sound Generator Section

Maximum Polyphony

128 voices (shared with the sampling section)

Parts

16 parts (Internal) + 16 parts (External) + 2 parts (ARX) + 24 parts (Audio Track)

Wave Memory

256 M bytes (16-bit linear equivalent)

Waveforms

2,230

Preset Memory

Patches: 1,664 + 256 (GM2)
Rhythm Sets: 64 + 9 (GM2)
Live Sets: 512
Studio Sets: 8

User Memory (per 1 project)

Patches:	512
Rhythm Sets:	64
Live Sets:	512
Studio Sets:	128

Effects

Patch Multi-Effects (PFX):16 systems, 76 types
Multi-Effects (MFX):2 systems, 78 types

Chorus:	1 system, 3 types
Reverb:	1 system, 10 types
Input Effects:	1 system, 6 types
Mastering Effects:	1 system, 3-band compressor

Sampling Section

Data Format

16-bit linear (File Type: .WAV/.AIFF)

Sampling Frequency

44.1 kHz (fixed)

Maximum Sampling Time

- When sampling memory isn't expanded (32 MB)
  mono: 360 sec. approx., stereo: 180 sec. approx.
- When sampling memory is expanded with DIMM (544 MB)
  mono: 108 min. approx., stereo: 54 min. approx.

Number of Samples (per 1project)

2,000

Sequencer Section

Tracks

MIDI tracks (Internal/External/ARX):max.128

Audio tracks:	max.24
Tempo track:	1
Beat track:	1

Resolution

480 TPQN

Tempo

5.00–300.00

Song (per 1 project)

50

Phrase (per 1 project)

2,000

Note Capacity (per 1 project)

approx. 1,000,000 notes

Song Length

9,998 measures

Recording Method

Realtime recording, Step recording

Others

Arpeggiator

128

Arpeggio Sets

128

RPS Sets

32

Rhythm Pattern Sets

32

Chord Memory

128

Chord Memory Sets

128

Display

Graphic Type, 8.5-inch, TFT Wide VGA (800 x 480 dots), backlit LCD (Color)

Pads

16 pads, Velocity and Polyphonic Aftertouch sensitive

Controllers

Pitch Bend/Modulation Lever
Control Knob x 4
Control Slider x 8
Assignable Switch x 2
D Beam Controller

Connectors

Headphones Jack: stereo 1/4 inch phone type
A (MIX) Output Jacks (L/MONO, R): 1/4 inch TRS phone type
B Output Jacks (L, R): 1/4 inch phone type
Input Jacks (L/MONO/MIC, R): 1/4 inch phone type
Mic./Guitar Input Jacks: 1/4 inch phone type/XLR type
(Phantom power) (Hi-Z)
Hold Pedal Jack (Half Pedal recognition)
Control Pedal Jack (assignable) x 2
MIDI Connectors (IN, OUT, THRU)
USB Computer Connector (supports file transfer (mass storage class) and Audio/MIDI)
USB Mouse Connector
Digital Audio Interface (COAXIAL INPUT/OUTPUT)
AC Inlet

Expansion Slots

- Expansion of sound generator
  ARX expansion boards: 2 slots
- Expansion of sampling memory
  DIMM: 1 slot (supports PC133, CL=2/3, 128 MB, 256 MB, 512 MB (3.3 V))

External Storage Device

USB Flash Memory

Power Supply

AC 117 V, AC 230 V, AC 240 V (50/60 Hz)
AC 220 V (60 Hz)

Power Consumption

30 W

Dimensions

[G6]:	1,066 (W) x 411 (D) x 142 (H) mm
	42 (W) x 16-3/16 (D) x 5-5/8 (H) inches
[G7]:	1,278 (W) 411 (D) x 142 (H) mm
	50-3/8 (W) x 16-3/16 (D) x 5-5/8 (H) inches
[G8]:	1,396 (W) 502 (D) x 183 (H) mm
	55 (W) x 19-13/16 (D) x 7-1/4 (H) inches

Weight

[G6]:	14.5 kg / 32 lbs
[G7]:	16.6 kg / 36 lbs 10 oz
[G8]:	33.6 kg / 74 lbs 2 oz

Accessories

Owner's Manual Set English (#73897189)

* *This unit includes the following parts.*
Owner's Manual English (#********)
Quick Start Guide English (#********)
Sound List English (#********)
Driver Installation Guide English (#********)

CD-ROM (Editor, USB MIDI driver) (#********)

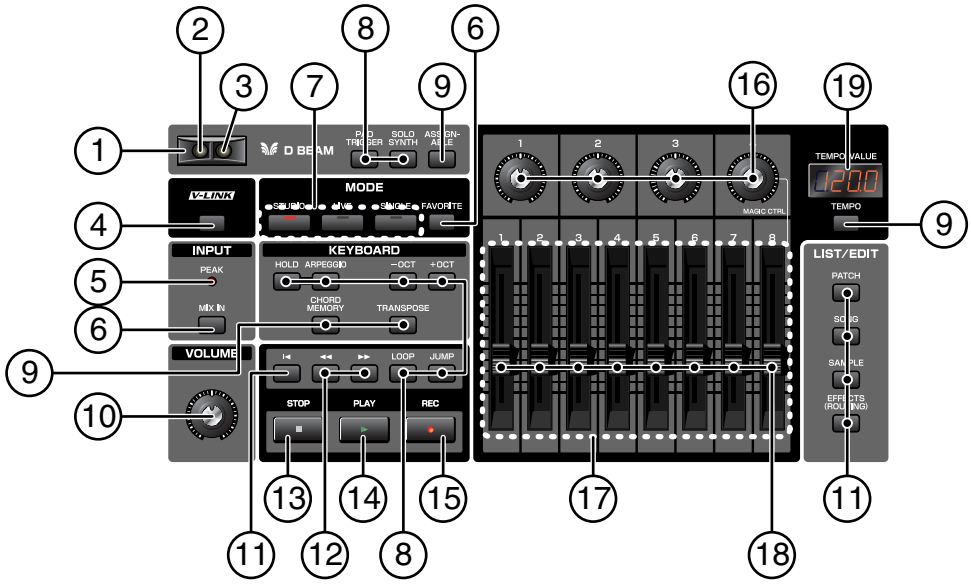
Power Cord	for 117V U/CS (#00894378)
	for 230V EU (#00894389)
	for 240V E (#00907001)
	for 240V A (#23495124)
	for 220V CN (#03450323)
	for 230V K (#04561701)

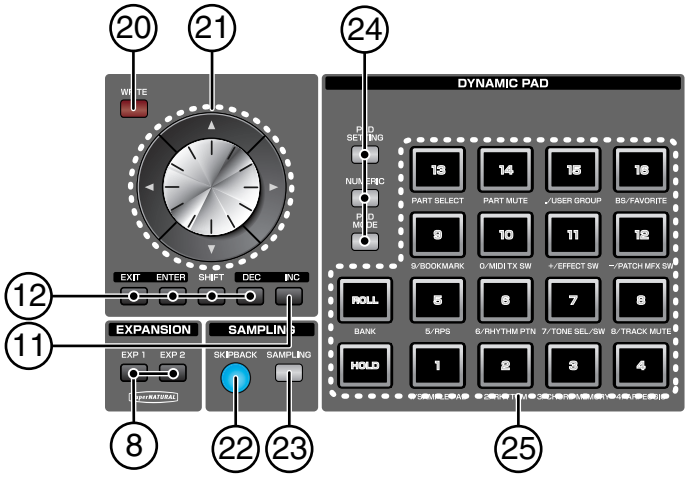
Options

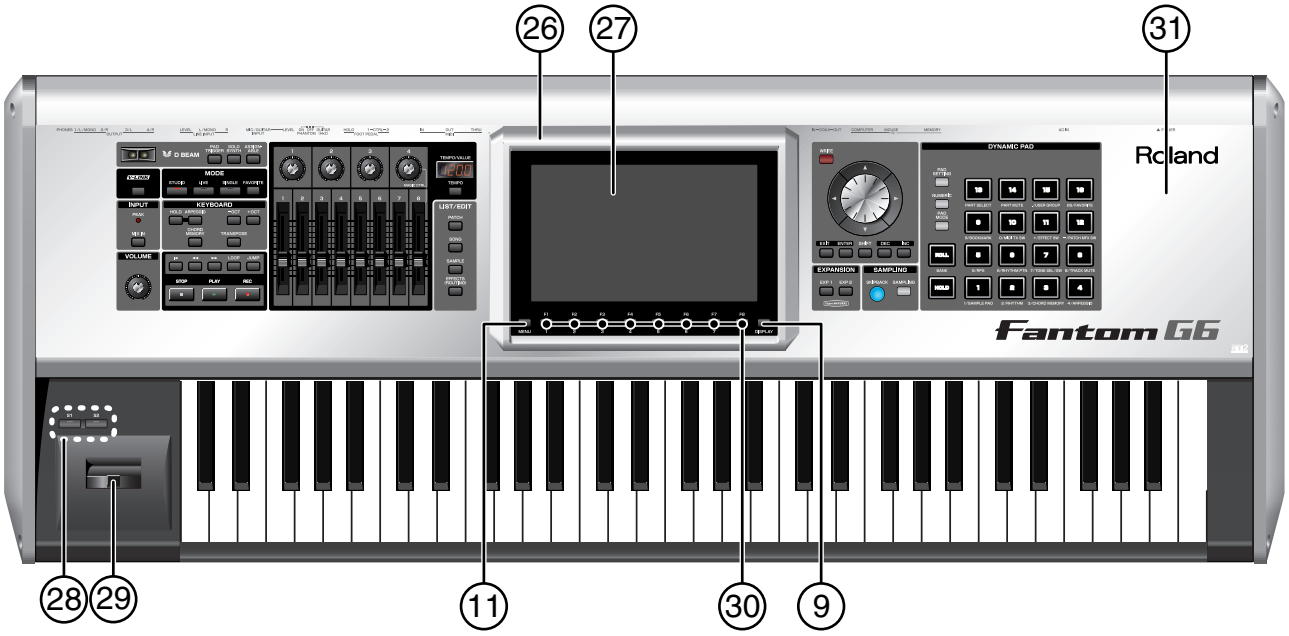
Expansion Board: ARX Series
Keyboard Stand: KS-18Z (Fantom-G6/G7/G8)
KS-G8 (Fantom-G8)
Pedal Switch: DP series
Foot Switch: BOSS FS-5U
Expression Pedal: EV-5
USB Memory: M-UF1G
Microphone: DR series
Headphone: RH-200

* *In the interest of product improvement, the specifications and/or appearance of this unit are subject to change without prior notice.*

Location of Controls (Top Panel)





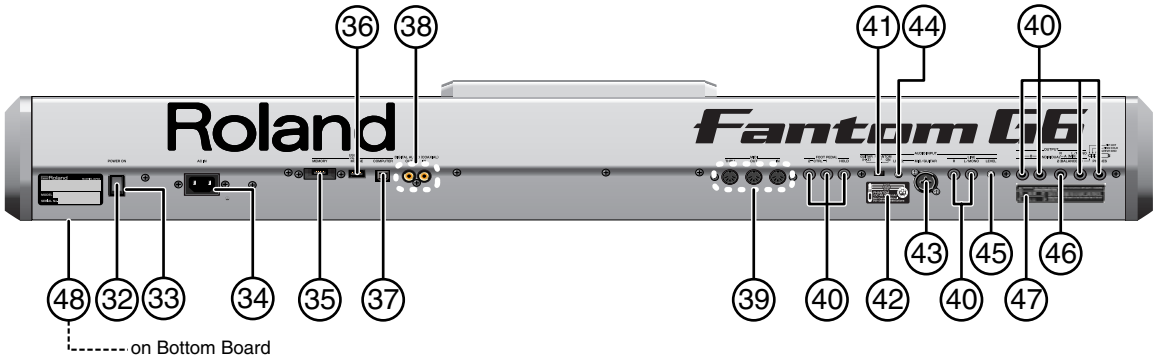


* *The Top Panel component layout at the Fantom-G7/G8 is identical to that of the Fantom-G6.*

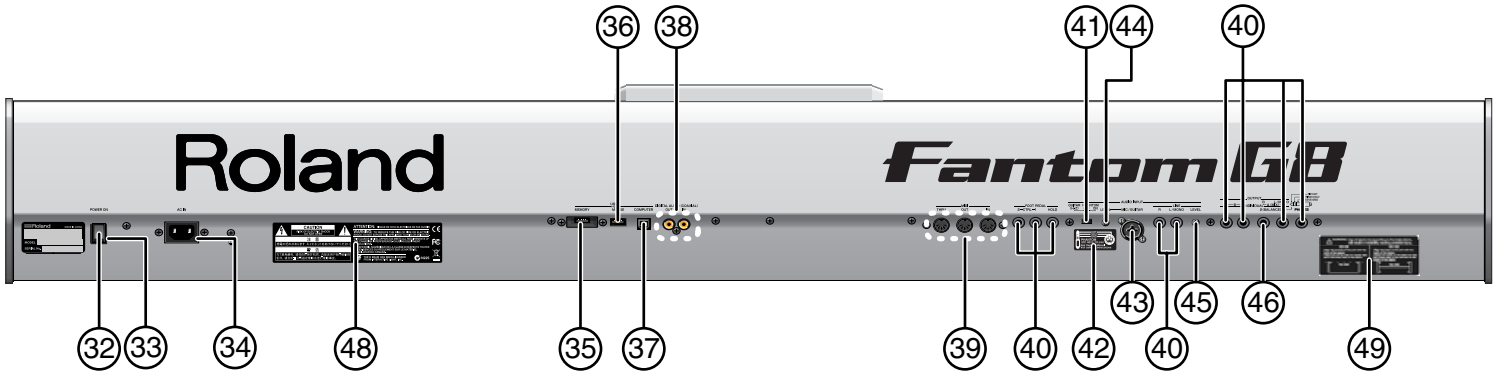
Location of Controls (Top Panel) Parts List

No.	Part Code	Part Name	Description		Q'ty
1	01343089	ESCUTCHEON	D-BEAM CONTROLLER ESCT BLK		1
2	01900612	DIODE	TPS611 (F)		1
	12169368	LED SPACER	LDS-40B		1
3	03126134	LED (INFRARED)	TLN233 (F)		1
	12169368	LED SPACER	LDS-40B		1
4	03120890	D S-KEYTOP	SX1H-B GRS		1
	02781634	TACT SWITCH	SKRGAED010		1
	03904323	LED	SLR-343BTCT32		1
5	03230656	LED (RED)	SLR-343VCT32		1
	12169391	LED SPACER	LH-5S-10		1
6	03120890	D S-KEYTOP	SX1H-B GRS		2
	02781634	TACT SWITCH	SKRGAED010		2
	01784556	LED	SLI-343URCT32W		2
7	22495279	D S-KEYTOP	MD3H BLK 249-279 (W/WINDOW)		1
	02781634	TACT SWITCH	SKRGAED010		3
	01784556	LED	SLI-343URCT32W		3
8	03120889	D S-KEYTOP	SX2H-B GRS		5
	02781634	TACT SWITCH	SKRGAED010		10
	02125167	LED (YELOW)	SLI-343DCT32W		10
9	03120890	D S-KEYTOP	SX1H-B GRS		4
	02781634	TACT SWITCH	SKRGAED010		4
	02125167	LED (YELOW)	SLI-343DCT32W		4
10	04124267	J R-KNOB SF-ELA BLK/SLV	990-05045-10-08		1
	13289189	POTENTIOMETER	RK14K1240A2D L1=15 50KBX2		1
11	03120890	D S-KEYTOP	SX1H-B GRS		7
	02781634	TACT SWITCH	SKRGAED010		7
12	03120889	D S-KEYTOP	SX2H-B GRS		3
	02781634	TACT SWITCH	SKRGAED010		6
13	04900023	KEYTOP STOP			1
	04675934	TACT SWITCH EVQPVA05K			1
14	04900001	KEYTOP PLAY			1
	04675934	TACT SWITCH EVQPVA05K			1
15	04900012	KEYTOP REC			1
	04675934	TACT SWITCH EVQPVA05K			1
16	04124267	J R-KNOB SF-ELA BLK/SLV	990-05045-10-08		4
	01787545	9M/M ROTARY POTENTIOMETER	EVUF2KFK3B14 10KB		4
17	04896878	D S-ESCT	SX4H-B BLK L=45		2
18	22485295	D S-KNOB	S BLK/LCG		8
	04897256	SLIDE POT.	RS45111-0A10-C0-P1-B103		8
19	04902645	LED COVER			1
	04896756	LED HDSP-U211-CD000			4
20	01129767	D S-KEYTOP	SX1H DRD		1
	02781634	TACT SWITCH	SKRGAED010		1
21	04565478	KNOB	ZE R-KNOB LF		1
	04566445	KEYTOP	ZE CURSOR KEY A		1
	04566456	KEYTOP	ZE CURSOR KEY B		1
	01905467	ROTARY ENCODER	EVE GC1 F20 24B		1
22	02013090	F C-KEYTOP	MX1H CLR		1
	02781634	TACT SWITCH	SKRGAED010		1
	03904323	LED	SLR-343BTCT32		1
23	03126867	D S-KEYTOP	SX1H-B CLR		1
	02781634	TACT SWITCH	SKRGAED010		1
	01784556	LED	SLI-343URCT32W		1
24	03126867	D S-KEYTOP	SX1H-B CLR		3
	02781634	TACT SWITCH	SKRGAED010		3
	02125167	LED (YELOW)	SLI-343DCT32W		3
25	04896834	RUBBER SW			1
	03122067	RUBBER SW ESCT			1
	03128767	PRESSURE SENSOR SHEET			1
	03565423	LED	TLOU1002A(T02)		18
26	04896867	DISPLAY ESCT			1
27	04902601	DISPLAY COVER			1
	05010989	LCD TCG085WV1AC-G04			1
	03675434	FRAME TAPE H			2
	04345723	FRAME TAPE H			2
28	22495278	DS-KEYTOP	MD2H BLK (W/WINDOW)		1
	02781634	TACT SWITCH	SKRGAED01		2
	02125167	LED (YELOW)	SLI-343DCT32W		2
29	03234723	BENDER	PB-H0204		1
30	03126878	D S-KEYTOP	SX1H-B BLK		8
	02781634	TACT SWITCH	SKRGAED010		8
31	04569456	TOP PANEL		Fantom-G6	1
	04903845	TOP PANEL		Fantom-G7	1
	04781056	TOP PANEL		Fantom-G8	1

Location of Controls (Rear Panel)



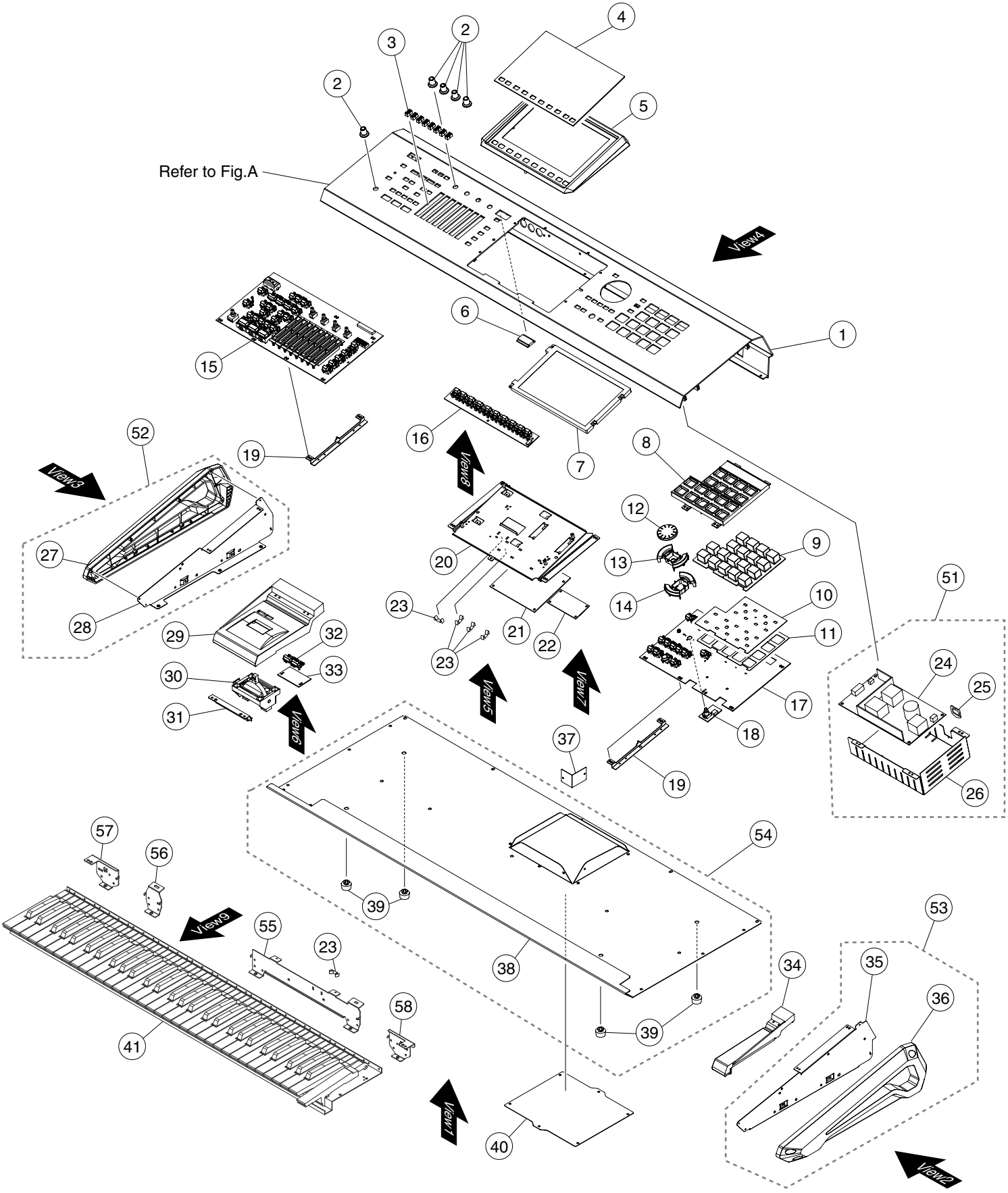
* *The Top Panel component layout at the Fantom-G7 is identical to that of the Fantom-G6.*



Location of Controls (Rear Panel) Parts List

No.	Part Code	Part Name	Description		Q'ty
32	01786012	SEESAW SWITCH	JW-M11RKK		1
33	01786045	SW HOLDER	AT-217K		1
34	73895278	INLET BOARD ASSY			1
35	04902689	USB ESCT			1
	04560101	USB CONNECTOR A TYPE FEMALE	UAR27-4K5J00		1
36	04560101	USB CONNECTOR A TYPE FEMALE	UAR27-4K5J00		1
37	02781189	USB CONNECTOR B TYPE FEMALE	YKF45-0021N		1
38	03231812	RCA(PIN)	YKC21-4173		1
39	13429274	MIDI SOCKET	YKF51-5041		1
40	13449275	6.5MM JACK	YKB21-5074		9
41	13159362	SLIDE SWITCH	SSSF123-S09N-1		1
42	40679445	LABEL	XLR LABEL		1
43	02232412	XLR CONNECTOR	NCJ6FI-H-0		1
44	04901712	ROTARY POT.	RK09K1110D4S		1
45	02781390	9M/M ROTARY POTENTIOMETER	RK09K12A0D0S 20KAX2		1
46	13449252	6.5MM JACK	YKB21-5006 (STEREO W/SW)		1
47	40784490	LABEL	STAND CAUTION LABEL	Fantom-G6/G7	1
48	40679434	LABEL	CAUTION LABEL		1
49	40784501	LABEL	STAND CAUTION LABEL	Fantom-G8	1

Exploded View (All) (Fantom-G6, Fantom-G7)

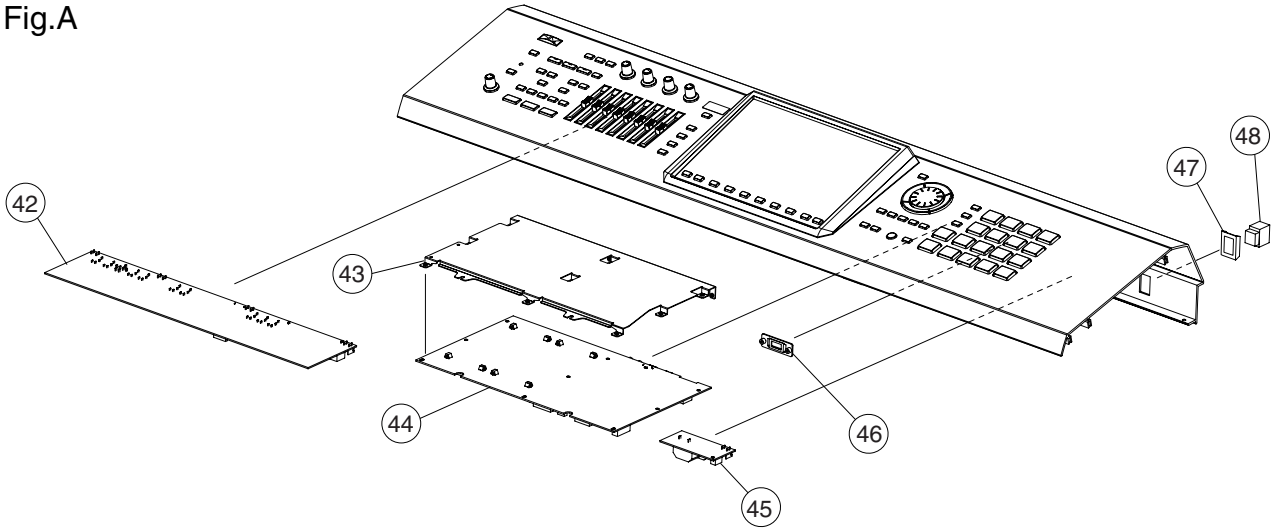


Exploded View (All) Parts List (Fantom-G6, Fantom-G7)

No.	Part Code	Part Name	Description		Q'ty
1	04569456	TOP PANEL		FANTOM-G6	1
	04903845	TOP PANEL		FANTOM-G7	1
2	04124267	J R-KNOB SF-ELA BLK/SLV	990-05045-10-08		5
3	22485295	D S-KNOB	S BLK/LCG		8
4	04902601	DISPLAY COVER			1
5	04896867	DISPLAY ESCT			1
6	04902645	LED COVER			1
7	05010989	LCD TCG085WV1AC-G04			1
8	03122067	RUBBER SW ESCT			1
9	04896834	RUBBER SW			1
10	03128767	PRESSURE SENSOR SHEET			1
11	05019756	INSULATING SHEET PAD			1
12	04565478	KNOB	ZE R-KNOB LF		1
13	04566456	KEYTOP	ZE CURSOR KEY B		1
14	04566445	KEYTOP	ZE CURSOR KEY A		1
15	73895234	PANEL-L KEYTOP ASSY			1
	04896878	D S-ESCT	SX4H-B BLK L=45	not included in #73895234	2
	22495279	D S-KEYTOP	MD3H BLK 249-279 (W/WINDOW)	not included in #73895234	1
16	73895256	PANEL-C KEYTOP ASSY			1
17	73895178	PANEL-R KEYTOP ASSY			1
	01129767	D S-KEYTOP	SX1H DRD	not included in #73895178	1
18	73895190	ENCODER BOARD ASSY			1
19	04566378	PANEL PWB HOLDER			2
20	04902612	DISPLAY HOLDER			1
21	73895201	SUB CPU BOARD ASSY			1
22	73895289	INVERTER BOARD ASSY			1
23	05012101	CLAMP	RFC-21V0		5
29	04566290	BENDER PANEL			1
30	03234723	BENDER	PB-H0204		1
31	02673945	STAY	BENDER		1
32	22495278	DS-KEYTOP	MD2H BLK (W/WINDOW)		1
33	73895212	BENDER SW BOARD ASSY			1
34	04566301	END BLOCK			1
37	04902634	INSULATING SHEET BOTTOM			1
	40016589	NYLON RIVET	NRP-335		2
40	04902623	EXP COVER			1
41	73780967	KEYBOARD ASSY	SK-1061-A	FANTOM-G6	1
	5100001544	KEYBOARD ASSY	SK-1076-C	FANTOM-G7	1
51	73895090	POWER SUPPLY ASSY			1
	* *This unit includes the following parts.*				
24	*******	SWTNG REG RLM50W			1
25	01455523	CORD BUSHING	EDS-1717U		1
26	*******	PWR SPLY HOLDER			1
52	73895101	SIDE COVER L ASSY			1
	* *This unit includes the following parts.*				
27	*******	SIDE COVER L			1
28	04566334	SIDE HOLDER L			1
53	73895112	SIDE COVER R ASSY			1
	* *This unit includes the following parts.*				
36	*******	SIDE COVER R			1
35	04566345	SIDE HOLDER R			1
54	73895301	BOTTOM COVER ASSY		FANTOM-G6	1
	* *This unit includes the following parts.*				
38	04902701	BOTTOM COVER			1
39	12359139	RUBBER FOOT	FF-018 BLK		4
54	73896234	BOTTOM COVER ASSY		FANTOM-G7	1
	* *This unit includes the following parts.*				
38	04903867	BOTTOM COVER			1
39	12359139	RUBBER FOOT	FF-018 BLK		4
55	04902656	PWB ANGLE			1
56	04566401	KBD HOLDER			1
57	04566412	KBD HOLDER SIDE L			1
58	04566423	KBD HOLDER SIDE R			1

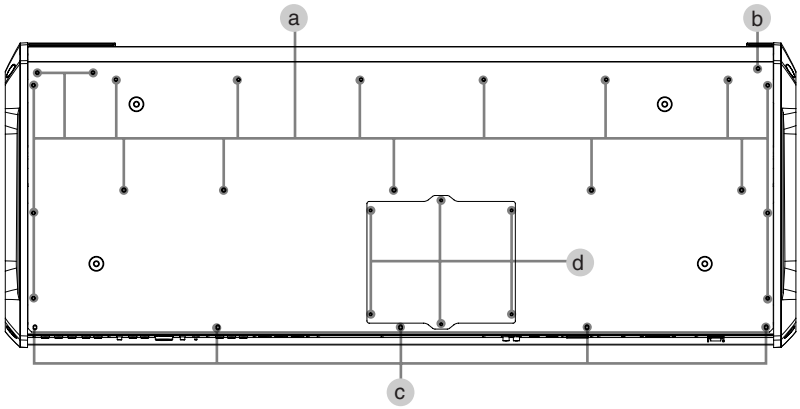
Exploded View (1) (Fantom-G6, Fantom-G7)

Fig.A

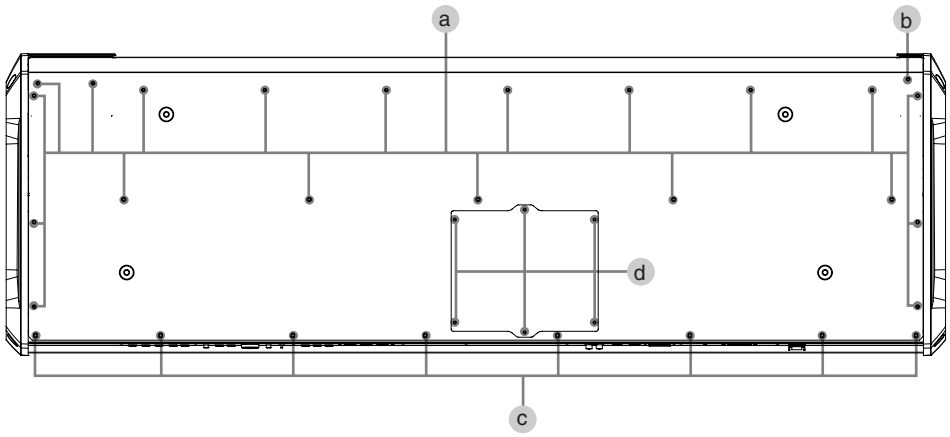


View1

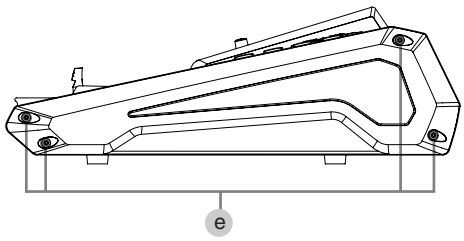
Fantom-G6



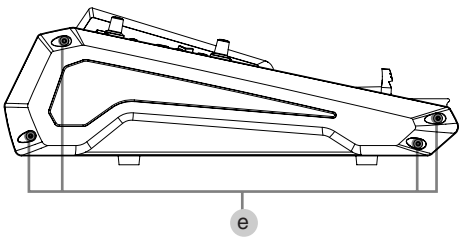
Fantom-G7



View2



View3



Exploded View (1) Parts List (Fantom-G6, Fantom-G7)

Fig.A

No.	Part Code	Part Name	Description		Q'ty
42	73895167	JACK BOARD ASSY		FANTOM-G6	1
	73896123	JACK BOARD ASSY		FANTOM-G7	1
43	04902667	PWB HOLDER MAIN			1
44	73895123	MAIN BOARD TOTAL			1
45	73895278	INLET BOARD ASSY			1
46	04902689	USB ESCT			1
47	01786045	SW HOLDER	AT-217K		1
48	01786012	SEESAW SWITCH	JW-M11RKK		1

View 1

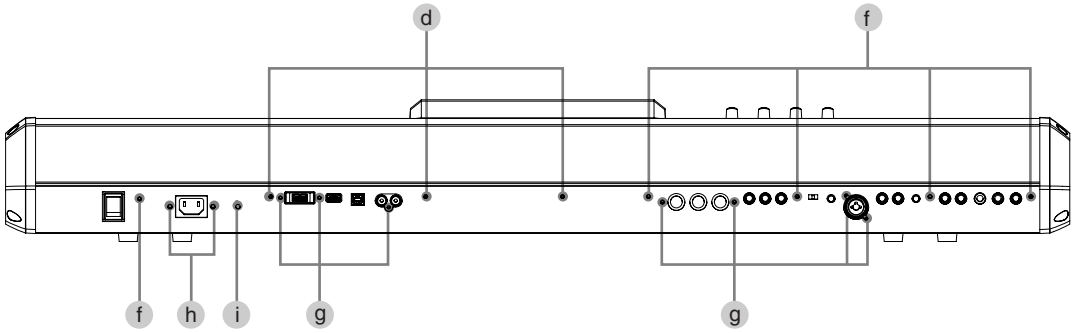
No.	Part Code	Part Name	Description		Q'ty
a	40011123	SCREW 4X8	BINDING TAPTITE B BZC	FANTOM-G6	19
	40011123	SCREW 4X8	BINDING TAPTITE B BZC	FANTOM-G7	20
b	40012501	SCREW M4X12	BINDING TAPTITE P FE BZC		1
c	40344623	SCREW M4X8	PAN SEMS SCREW W/SW+SMALL BZC	FANTOM-G6	5
	40344623	SCREW M4X8	PAN SEMS SCREW W/SW+SMALL BZC	FANTOM-G7	8
d	40011101	SCREW 3X8	BINDING TAPTITE B BZC		6

View 2, 3

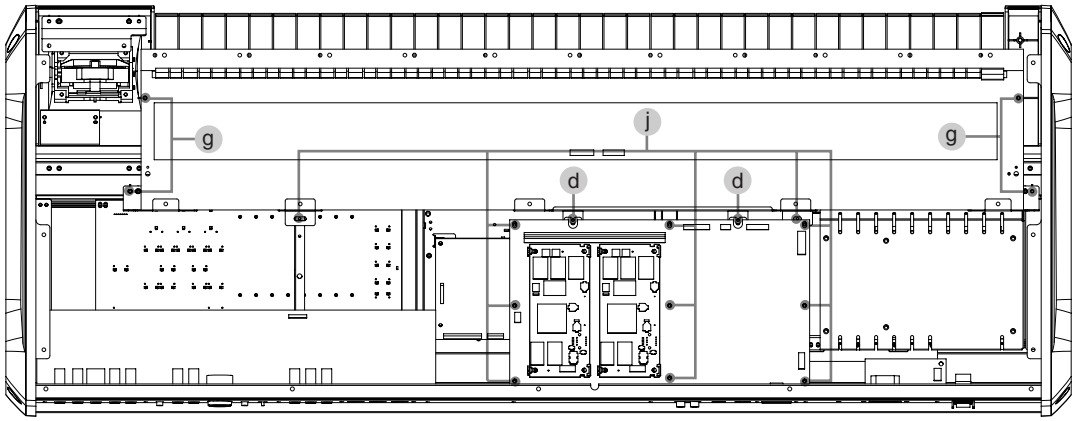
No.	Part Code	Part Name	Description	Q'ty
e	40454045	SCREW 3X8	FLAT TAPTITEB NI FLANGE S	8

Exploded View (2) (Fantom-G6, Fantom-G7)

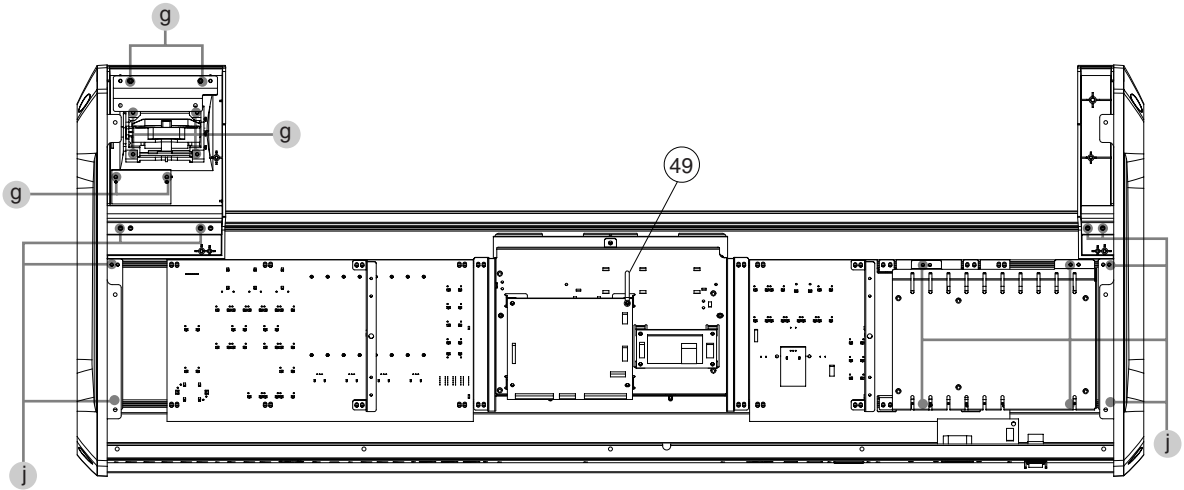
View4



View5



View6



Exploded View (2) Parts List (Fantom-G6, Fantom-G7)

View 4

No.	Part Code	Part Name	Description	Q'ty
d	40011101	SCREW 3X8	BINDING TAPTITE B BZC	3
f	40237101	SCREW M3X8	PAN MACHINE W/SW+SMALL PW BZC	5
g	40011312	SCREW 3X8	BINDING TAPTITE P BZC	7
h	40238501	SCREW 4X8	BINDING TAPTITE P BZC	2
i	40010345	SCREW M4X10	BINDING MACHINE FE BZC	1
	40011745	HEX NUT M4	SPRING NUT FE ZC	1

View 5

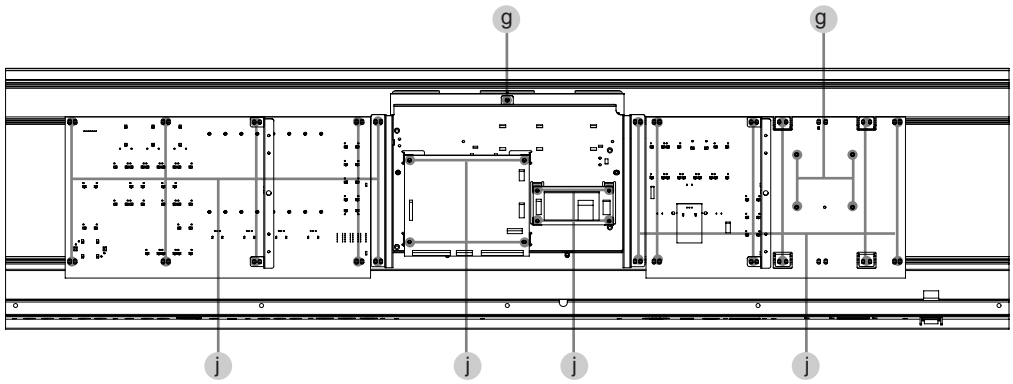
No.	Part Code	Part Name	Description	Q'ty
d	40011101	SCREW 3X8	BINDING TAPTITE B BZC	2
g	40011312	SCREW 3X8	BINDING TAPTITE P BZC	4
j	40011067	SCREW 3X8	BINDING TAPTITE B FE ZC	11

View 6

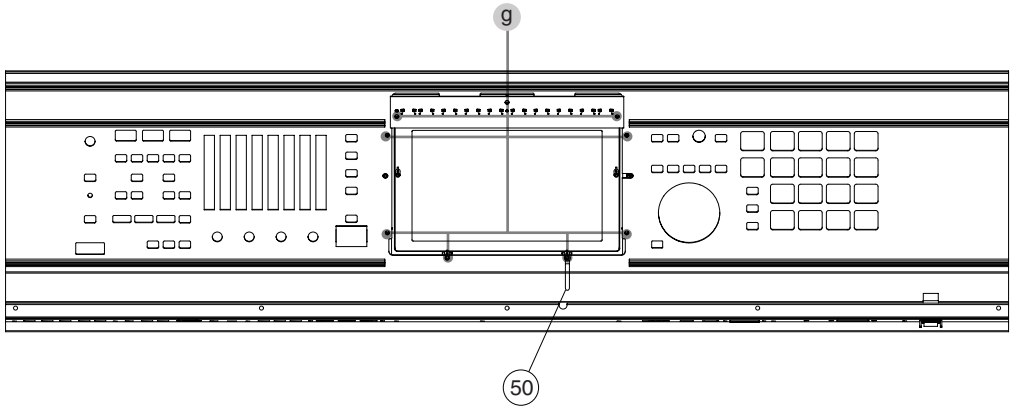
No.	Part Code	Part Name	Description	Q'ty
49	40120967	COATING CLIP	CS-3	1
g	40011312	SCREW 3X8	BINDING TAPTITE P BZC	8
j	40011067	SCREW 3X8	BINDING TAPTITE B FE ZC	12

Exploded View (3) (Fantom-G6, Fantom-G7)

View7

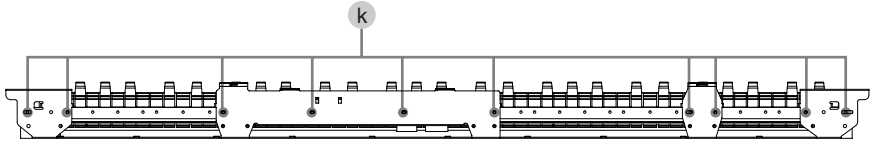


View8

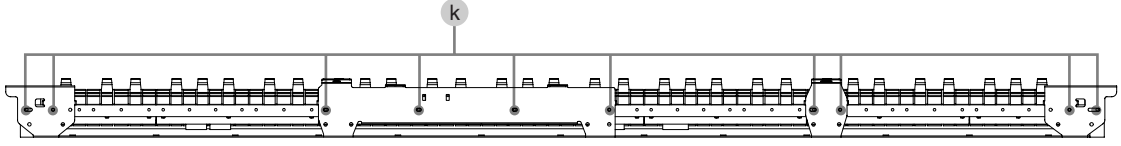


View9

Fantom-G6



Fantom-G7



Exploded View (3) Parts List (Fantom-G6, Fantom-G7)

View 7

No.	Part Code	Part Name	Description	Q'ty
g	40011312	SCREW 3X8	BINDING TAPTITE P BZC	5
j	40011067	SCREW 3X8	BINDING TAPTITE B FE ZC	30

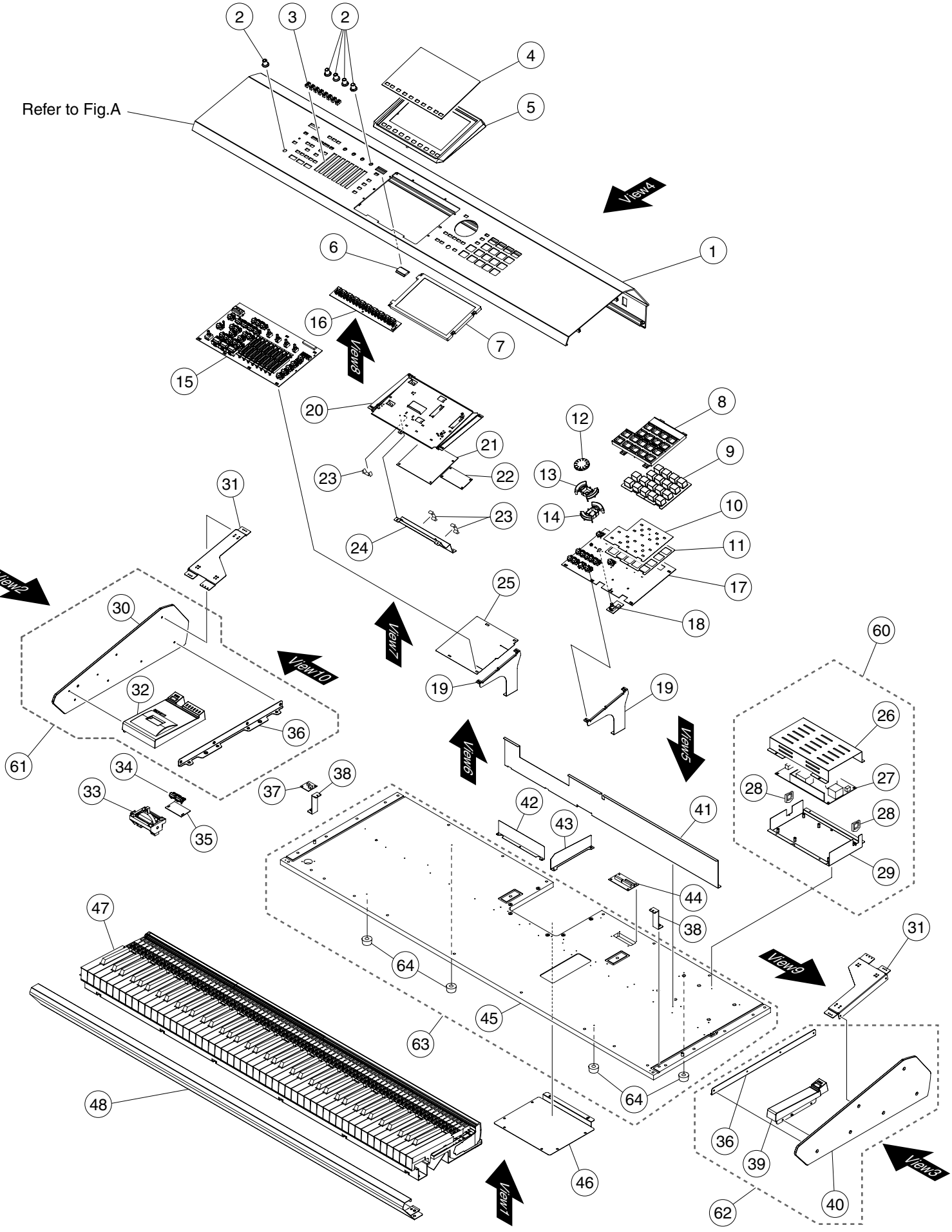
View 8

No.	Part Code	Part Name	Description	Q'ty
50	40017378	COATING CLIP	CS-7	1
g	40011312	SCREW 3X8	BINDING TAPTITE P BZC	8

View 9

No.	Part Code	Part Name	Description	Q'ty
k	40011056	SCREW 3X6	BINDING TAPTITE B ZC	10

Exploded View (All) (Fantom-G8)

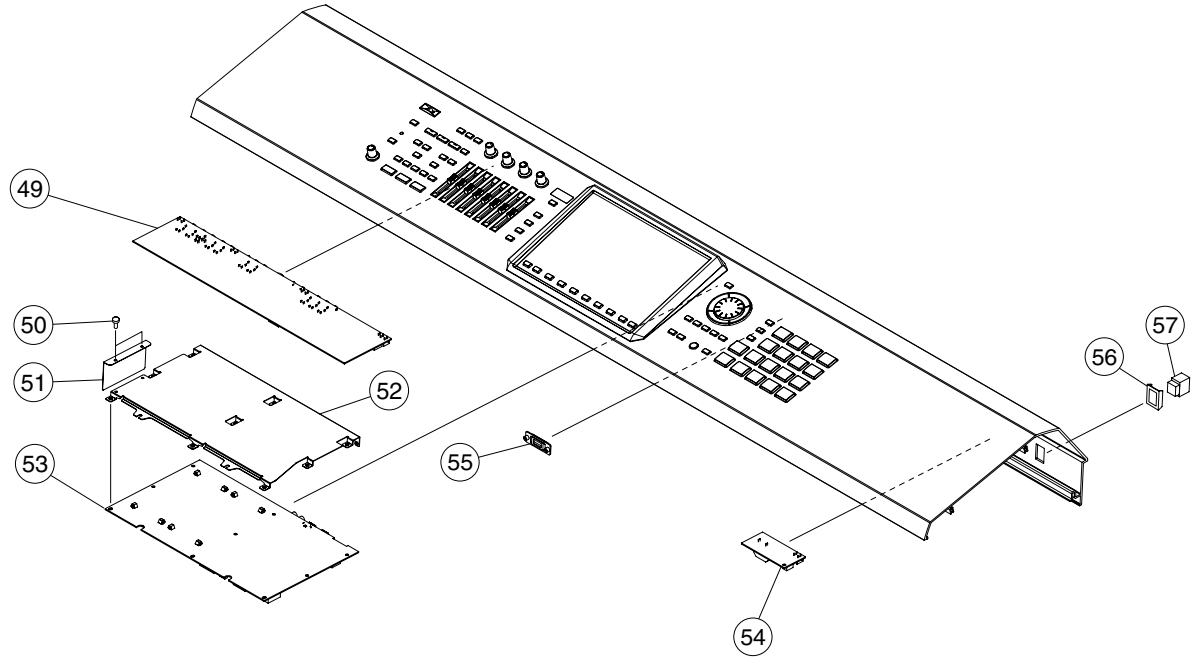


Exploded View (All) Parts List (Fantom-G8)

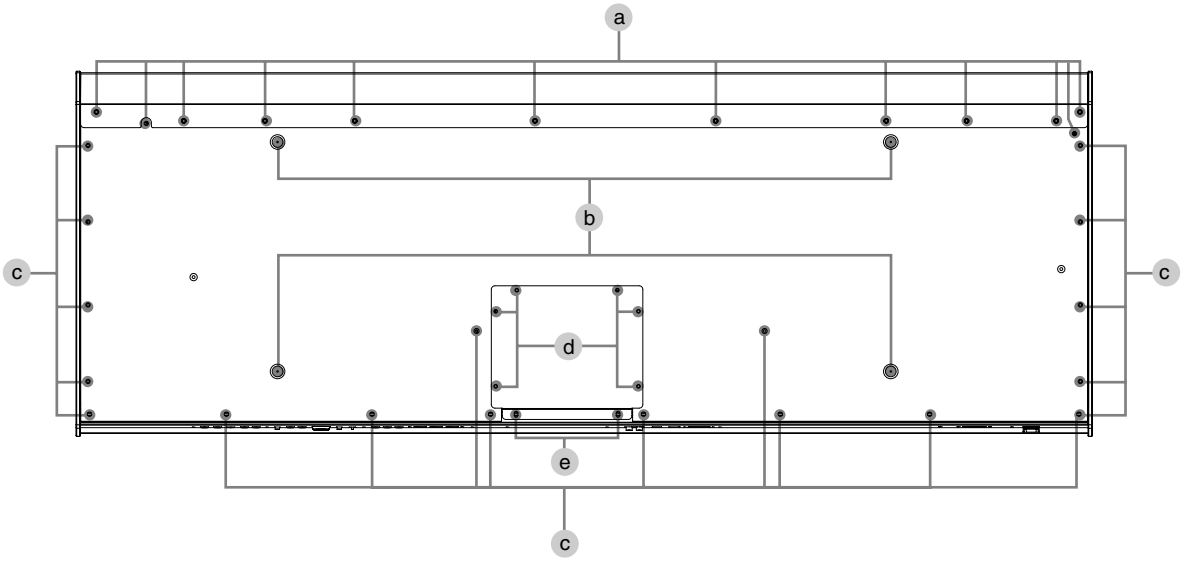
No.	Part Code	Part Name	Description	Q'ty
1	04781056	TOP PANEL		1
2	04124267	J R-KNOB SF-ELA BLK/SLV	990-05045-10-08	5
3	22485295	D S-KNOB	S BLK/LCG	8
4	04902601	DISPLAY COVER		1
5	04896867	DISPLAY ESCT		1
6	04902645	LED COVER		1
7	05010989	LCD TCG085WV1AC-G04		1
8	03122067	RUBBER SW ESCT		1
9	04896834	RUBBER SW		1
10	03128767	PRESSURE SENSOR SHEET		1
11	05019756	INSULATING SHEET PAD		1
12	04565478	KNOB	ZE R-KNOB LF	1
13	04566456	KEYTOP	ZE CURSOR KEY B	1
14	04566445	KEYTOP	ZE CURSOR KEY A	1
15	73895234	PANEL-L KEYTOP ASSY		1
	04896878	D S-ESCT	SX4H-B BLK L=45	2
	22495279	D S-KEYTOP	MD3H BLK 249-279 (W/WINDOW)	1
16	73895256	PANEL-C KEYTOP ASSY		1
17	73895178	PANEL-R KEYTOP ASSY		1
	01129767	D S-KEYTOP	SX1H DRD	1
18	73895190	ENCODER BOARD ASSY		1
19	04904034	STAY		2
20	04902612	DISPLAY HOLDER		1
21	73895201	SUB CPU BOARD ASSY		1
22	73895289	INVERTER BOARD ASSY		1
23	05012101	CLAMP	RFC-21V0	3
24	04903989	MAIN BOARD HOLDER		1
25	04903978	INSULATING SHEET PANEL		1
31	04904023	PANEL ANGLE		2
33	03234723	BENDER	PB-H0204	1
34	22495278	DS-KEYTOP	MD2H BLK (W/WINDOW)	1
35	73895212	BENDER SW BOARD ASSY		1
37	73896378	AFTER BOARD ASSY		1
38	00128089	END BLOCK HOLDER		2
41	04904001	BOTTOM ANGLE A		1
42	04903956	INSULATING SHEET BOTTOM		1
43	04904012	BOTTOM ANGLE B		1
44	73896389	KEY LINK BOARD ASSY		2
46	04903945	EXP COVER		1
47	5100001543	KEYBOARD ASSY	PHA2-F	1
48	04904189	BLIND		1
60	73896312	POWER SUPPLY ASSY		1
	* *This unit includes the following parts.*			
26	*******	PWR SPLY COVER		1
27	*******	SWTNG REG RLM50W		1
28	01455523	CORD BUSHING	EDS-1717U	2
29	*******	PWR SPLY HOLDER		1
61	73896323	SIDE PANEL L ASSY		1
	* *This unit includes the following parts.*			
30	*******	SIDE PANEL L		1
32	04892967	BENDER PANEL		1
36	*******	SIDE ANGLE		1
62	73896334	SIDE PANEL R ASSY		1
	* *This unit includes the following parts.*			
36	*******	SIDE ANGLE		1
39	04892978	END BLOCK		1
40	*******	SIDE PANEL R		1
63	73896490	BOTTOM BOARD ASSY		1
	* *This unit includes the following parts.*			
45	*******	BOTTOM BOARD		1
64	12359105	RUBBER FOOT W	RS-09 235-105	4

Exploded View (1) (Fantom-G8)

Fig.A



View1



Exploded View (1) Parts List (Fantom-G8)

Fig.A

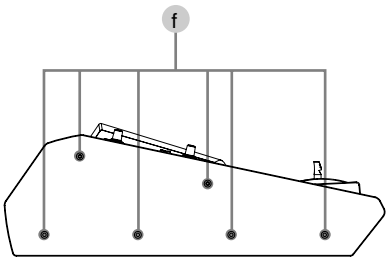
No.	Part Code	Part Name	Description	Q'ty
49	73896356	JACK BOARD ASSY		1
50	40016589	NYLON RIVET	NRP-335	2
51	04903967	INSULATING SHEET MAIN		1
52	04902667	PWB HOLDER MAIN		1
53	73895123	MAIN BOARD TOTAL		1
54	73895278	INLET BOARD ASSY		1
55	04902689	USB ESCT		1
56	01786045	SW HOLDER	AT-217K	1
57	01786012	SEESAW SWITCH	JW-M11RKK	1

View 1

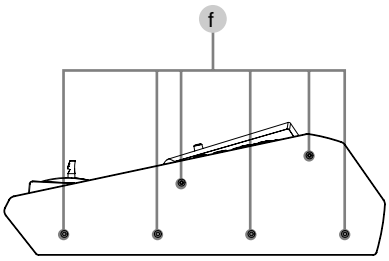
No.	Part Code	Part Name	Description	Q'ty
a	40013023	SCREW M4X25	PAN MACHINE W/SW+PW FE BZC	12
b	40010745	SCREW 3X16	BINDING HEAD TAPPING A1 FEZC	4
c	40128512	SCREW 4X25X20	PAN WASHER HEAD TAPTITE B BZC	18
d	40126267	SCREW M4X16	PAN MACHINE W/SW+PW BZC	6
e	40011123	SCREW 4X8	BINDING TAPTITE B BZC	2

Exploded View (2) (Fantom-G8)

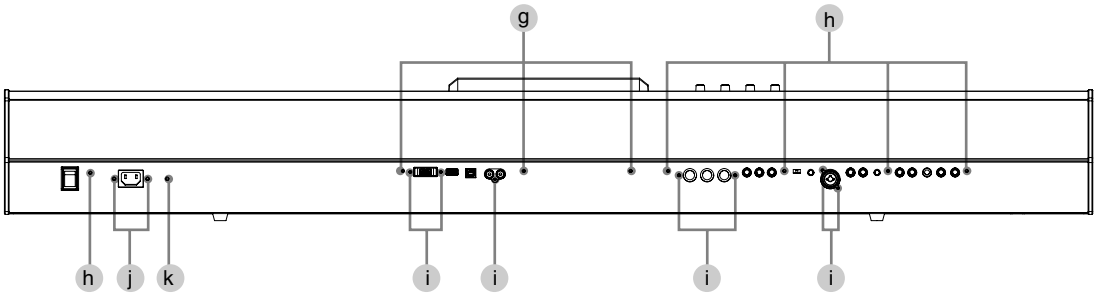
View2



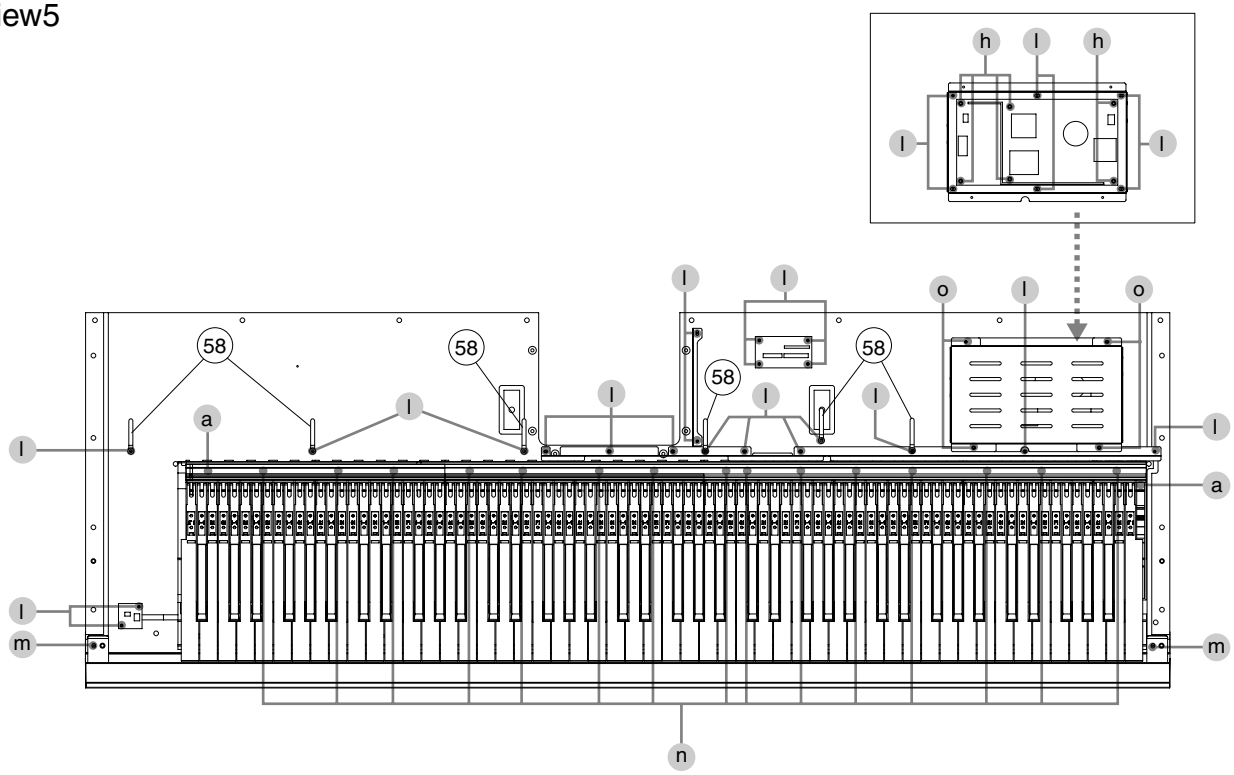
View3



View4



View5



Exploded View (2) Parts List (Fantom-G8)

View 2, 3

No.	Part Code	Part Name	Description	Q'ty
f	40346289	SCREW 4X12	OVAL HEAD TAPTITE B NI	12

View 4

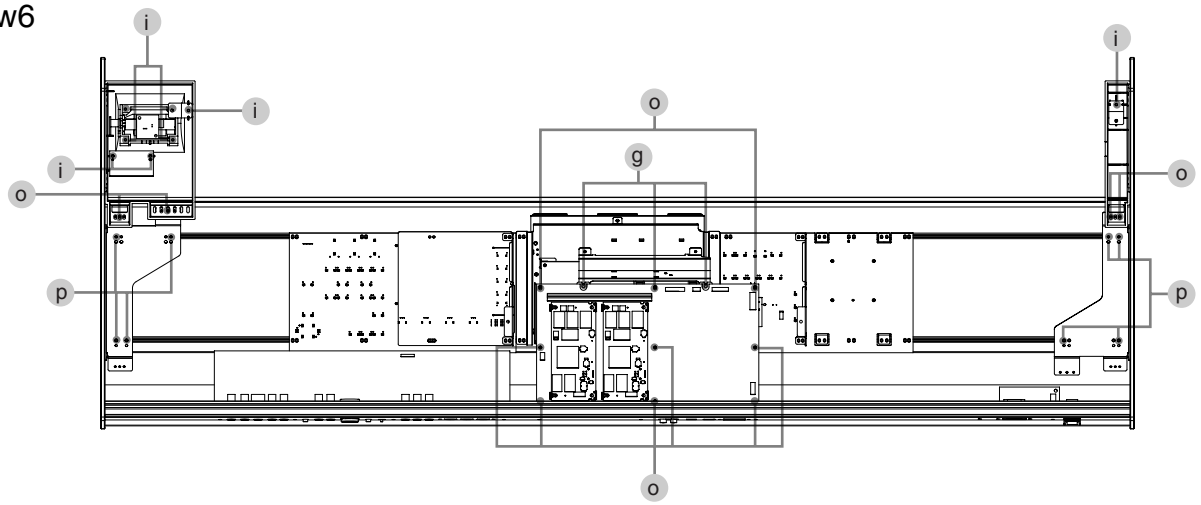
No.	Part Code	Part Name	Description	Q'ty
g	40011101	SCREW 3X8	BINDING TAPTITE B BZC	3
h	40237101	SCREW M3X8	PAN MACHINE W/SW+SMALL PW BZC	5
i	40011312	SCREW 3X8	BINDING TAPTITE P BZC	7
j	40238501	SCREW 4X8	BINDING TAPTITE P BZC	2
k	40010345	SCREW M4X10	BINDING MACHINE FE BZC	1
	40011745	HEX NUT M4	SPRING NUT FE ZC	1

View 5

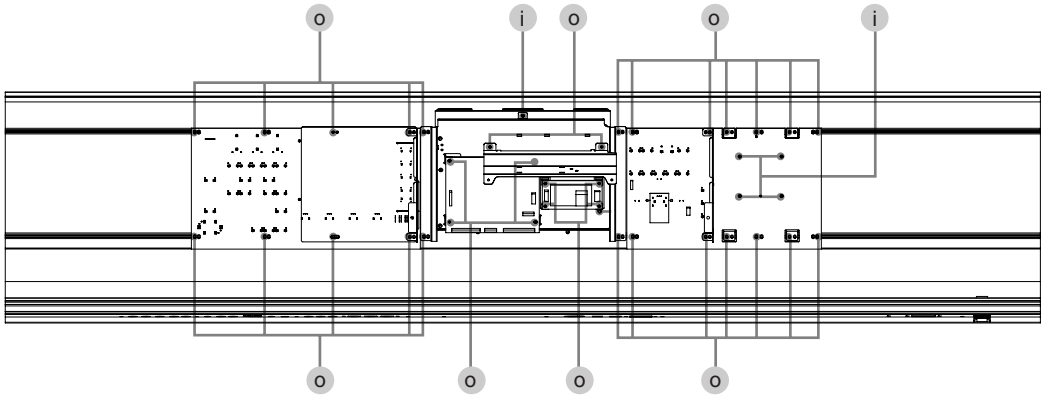
No.	Part Code	Part Name	Description	Q'ty
58	40120967	COATING CLIP	CS-3	6
a	40013023	SCREW M4X25	PAN MACHINE W/SW+PW FE BZC	2
h	40237101	SCREW M3X8	PAN MACHINE W/SW+SMALL PW BZC	6
l	40010734	SCREW 3X12	BINDING HEAD TAPPING A FE ZC	27
m	40012145	SCREW 4X14	TRUSS TAPPING A BZC	2
n	40346201	SCREW 4X20	TRUSS TAPPING TWIN BZC	15
o	40011067	SCREW 3X8	BINDING TAPTITE B FE ZC	4

Exploded View (3) (Fantom-G8)

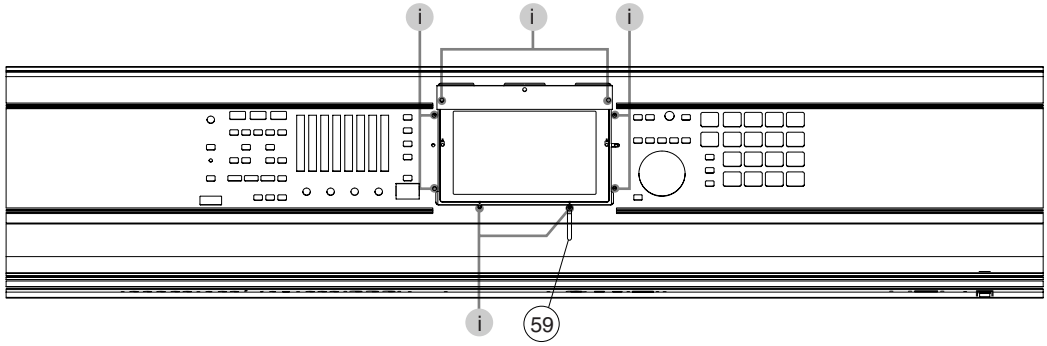
View6



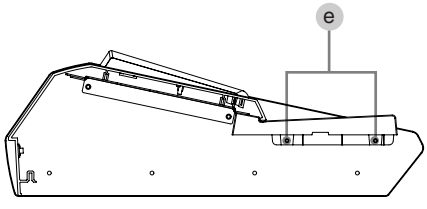
View7



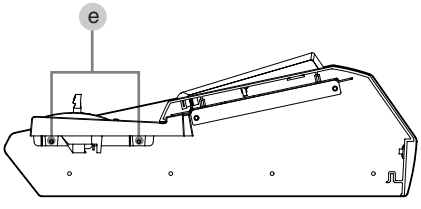
View8



View9



View10



Exploded View (3) Parts List (Fantom-G8)

View 6

No.	Part Code	Part Name	Description	Q'ty
g	40011101	SCREW 3X8	BINDING TAPTITE B BZC	3
i	40011312	SCREW 3X8	BINDING TAPTITE P BZC	8
o	40011067	SCREW 3X8	BINDING TAPTITE B FE ZC	12
p	5100000383	SCREW 3X8	BINDING TAPTITE B W/NW FE BZC	8

View 7

No.	Part Code	Part Name	Description	Q'ty
i	40011312	SCREW 3X8	BINDING TAPTITE P BZC	5
o	40011067	SCREW 3X8	BINDING TAPTITE B FE ZC	34

View 8

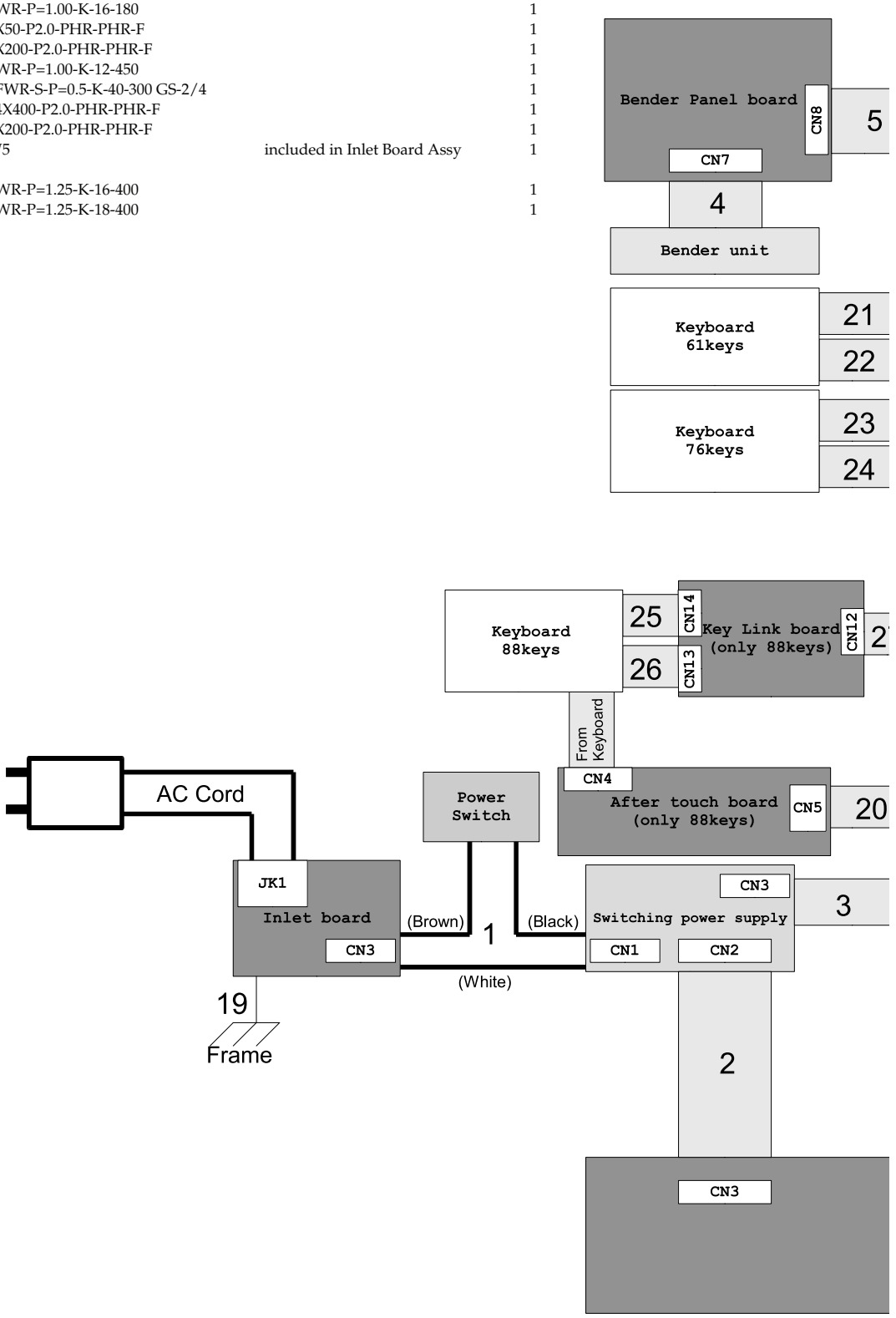
No.	Part Code	Part Name	Description	Q'ty
59	40017378	COATING CLIP	CS-7	1
i	40011312	SCREW 3X8	BINDING TAPTITE P BZC	8

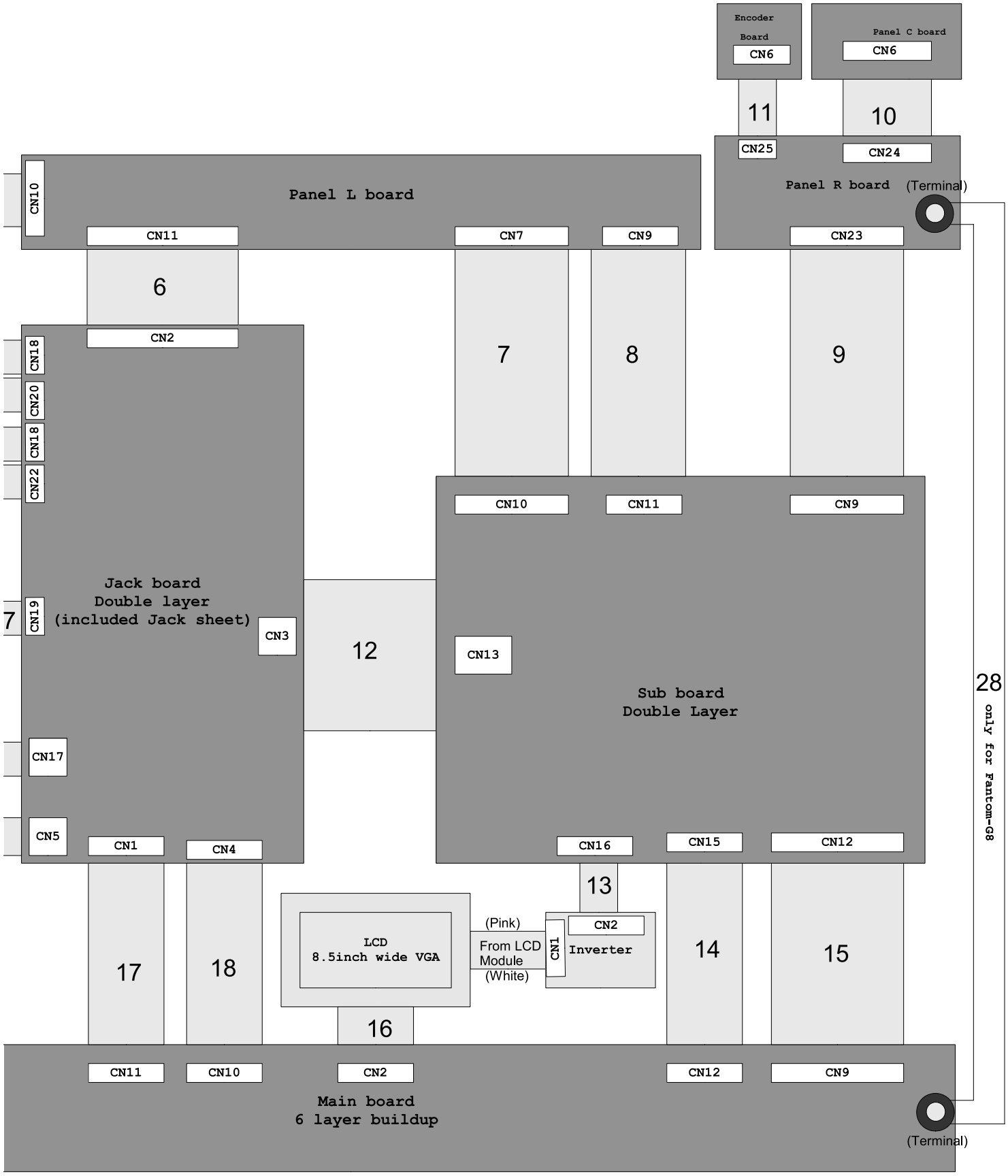
View 9, 10

No.	Part Code	Part Name	Description	Q'ty
e	40011123	SCREW 4X8	BINDING TAPTITE B BZC	4

Wiring Diagram (Fantom-G6)

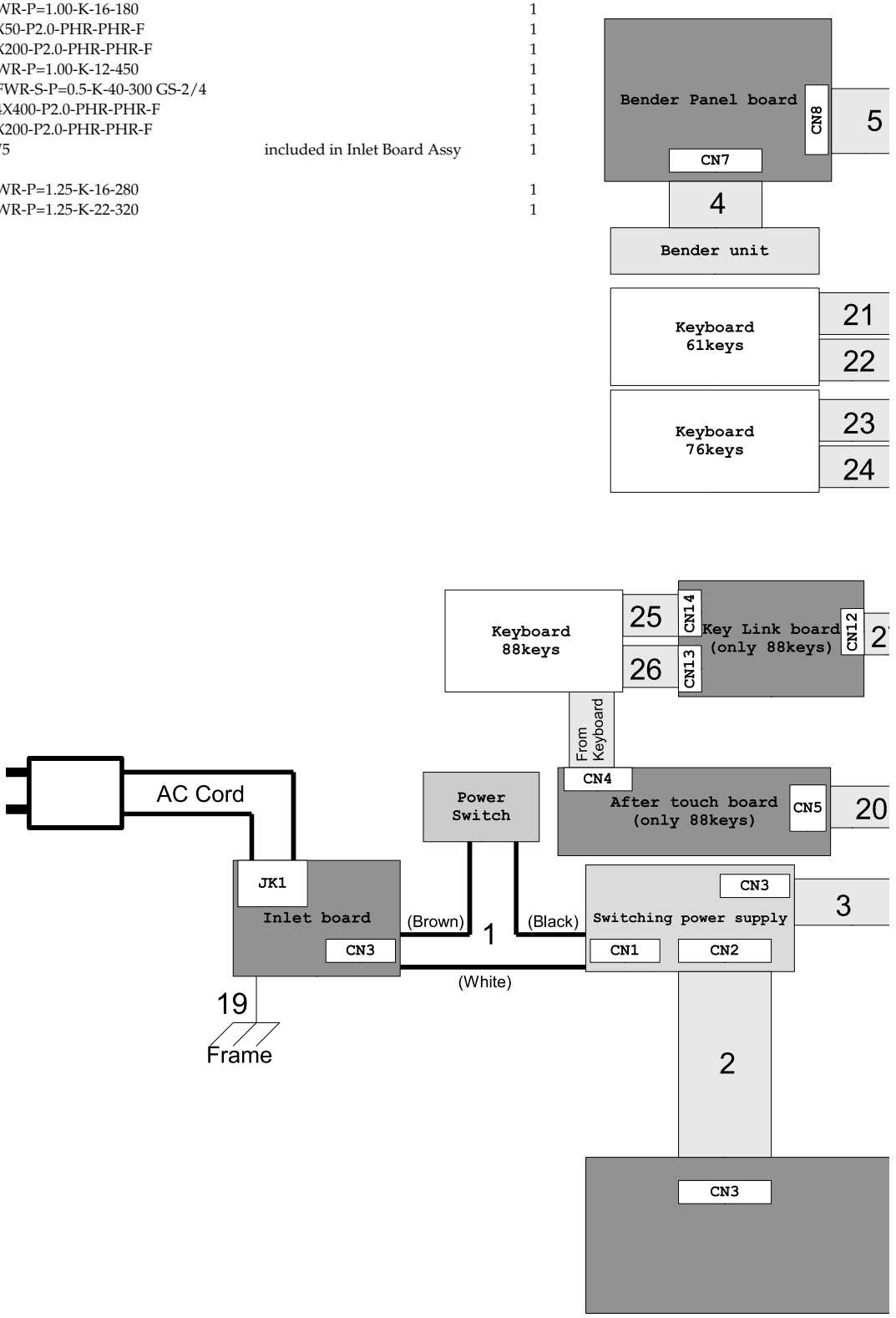
No.	Part Code	Part Name	Description		Q'ty
1	05011178	WIRING	W1	included in Power Supply Assy	1
2	05011189	WIRING	W2	included in Power Supply Assy	1
3	05011190	WIRING	W3	included in Power Supply Assy	1
4	02341978	WIRING	4X100-P2.0-PHR-PHR-F		1
5	05011201	BAN CARD	FWR-P=1.00-K-10-220		1
6	02343823	WIRING	10X200-P2.0-PHR-PHR-F		1
7	05011212	BAN CARD	FWR-P=1.00-K-36-240		1
8	05011223	BAN CARD	FWR-P=1.00-K-14-320		1
9	05011234	BAN CARD	FWR-P=1.00-K-40-340		1
10	05011245	BAN CARD	FWR-P=1.00-K-10-140		1
11	02341967	WIRING	4X50-P2.0-PHR-PHR-F		1
12	04569601	BAN CARD	FWR-P=1.00-K-16-180		1
13	02343212	WIRING	6X50-P2.0-PHR-PHR-F		1
14	02342012	WIRING	4X200-P2.0-PHR-PHR-F		1
15	05011256	BAN CARD	FWR-P=1.00-K-12-450		1
16	05011267	BAN CARD	SFWR-S-P=0.5-K-40-300 GS-2/4		1
17	02344189	WIRING	14X400-P2.0-PHR-PHR-F		1
18	02343245	WIRING	6X200-P2.0-PHR-PHR-F		1
19	04566934	WIRING	W5	included in Inlet Board Assy	1
21	04785990	BAN CARD	FWR-P=1.25-K-16-400		1
22	05011278	BAN CARD	FWR-P=1.25-K-18-400		1

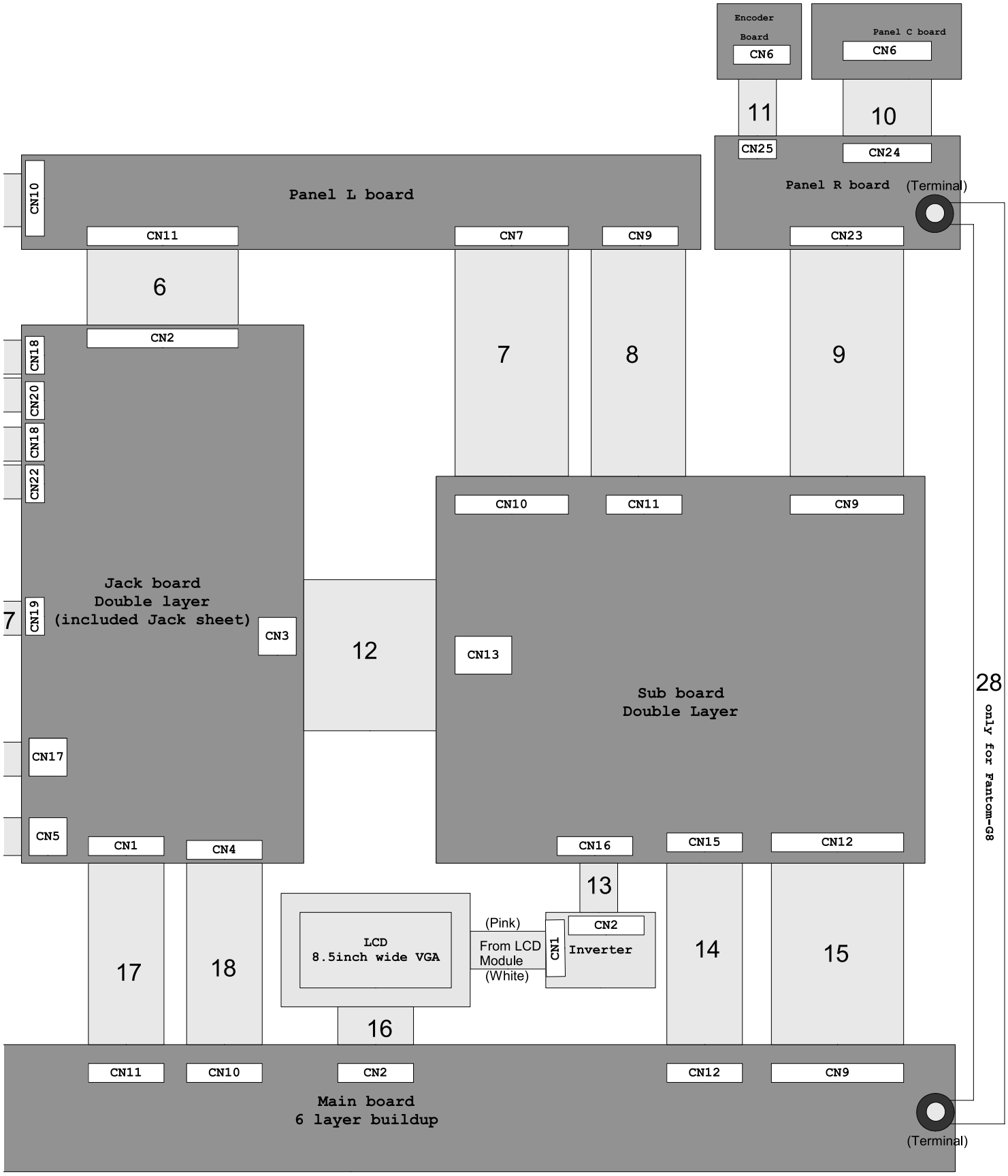



Encoder
Board
CN6
Panel C board
CN6
11
10
CN25
CN24
Panel L board
Panel R board
(Terminal)
CN10
CN11
CN7
CN9
CN23
6
7
8
9
CN2
CN18
CN20
CN18
CN22
CN10
CN11
CN9
Jack board
Double layer
(included Jack sheet)
CN19
CN3
12
CN13
Sub board
Double Layer
28
only for Fantom-G8
CN17
CN5
CN1
CN4
CN16
CN15
CN12
13
17
18
LCD
8.5inch wide VGA
(Pink)
From LCD
Module
(White)
CN1
CN2
Inverter
14
15
16
CN11
CN10
CN2
CN12
CN9
Main board
6 layer buildup
(Terminal)

Wiring Diagram (Fantom-G7)

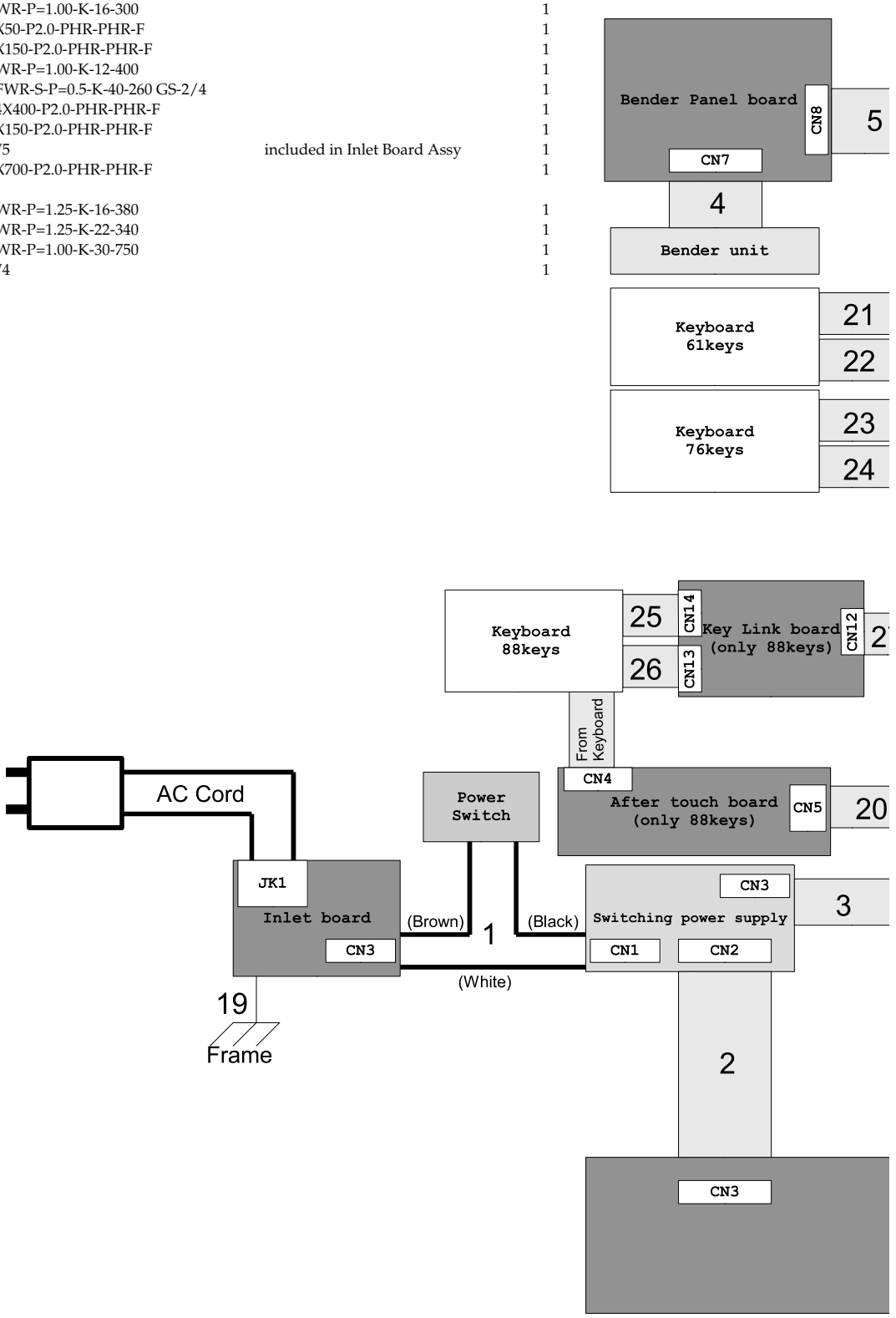
No.	Part Code	Part Name	Description		Q'ty
1	05011178	WIRING	W1	included in Power Supply Assy	1
2	05011189	WIRING	W2	included in Power Supply Assy	1
3	05011190	WIRING	W3	included in Power Supply Assy	1
4	02341978	WIRING	4X100-P2.0-PHR-PHR-F		1
5	05011289	BAN CARD	FWR-P=1.00-K-10-320		1
6	02343823	WIRING	10X200-P2.0-PHR-PHR-F		1
7	05011212	BAN CARD	FWR-P=1.00-K-36-240		1
8	05011223	BAN CARD	FWR-P=1.00-K-14-320		1
9	05011234	BAN CARD	FWR-P=1.00-K-40-340		1
10	05011245	BAN CARD	FWR-P=1.00-K-10-140		1
11	02341967	WIRING	4X50-P2.0-PHR-PHR-F		1
12	04569601	BAN CARD	FWR-P=1.00-K-16-180		1
13	02343212	WIRING	6X50-P2.0-PHR-PHR-F		1
14	02342012	WIRING	4X200-P2.0-PHR-PHR-F		1
15	05011256	BAN CARD	FWR-P=1.00-K-12-450		1
16	05011267	BAN CARD	SFWR-S-P=0.5-K-40-300 GS-2/4		1
17	02344189	WIRING	14X400-P2.0-PHR-PHR-F		1
18	02343245	WIRING	6X200-P2.0-PHR-PHR-F		1
19	04566934	WIRING	W5	included in Inlet Board Assy	1
23	05011290	BAN CARD	FWR-P=1.25-K-16-280		1
24	05011301	BAN CARD	FWR-P=1.25-K-22-320		1

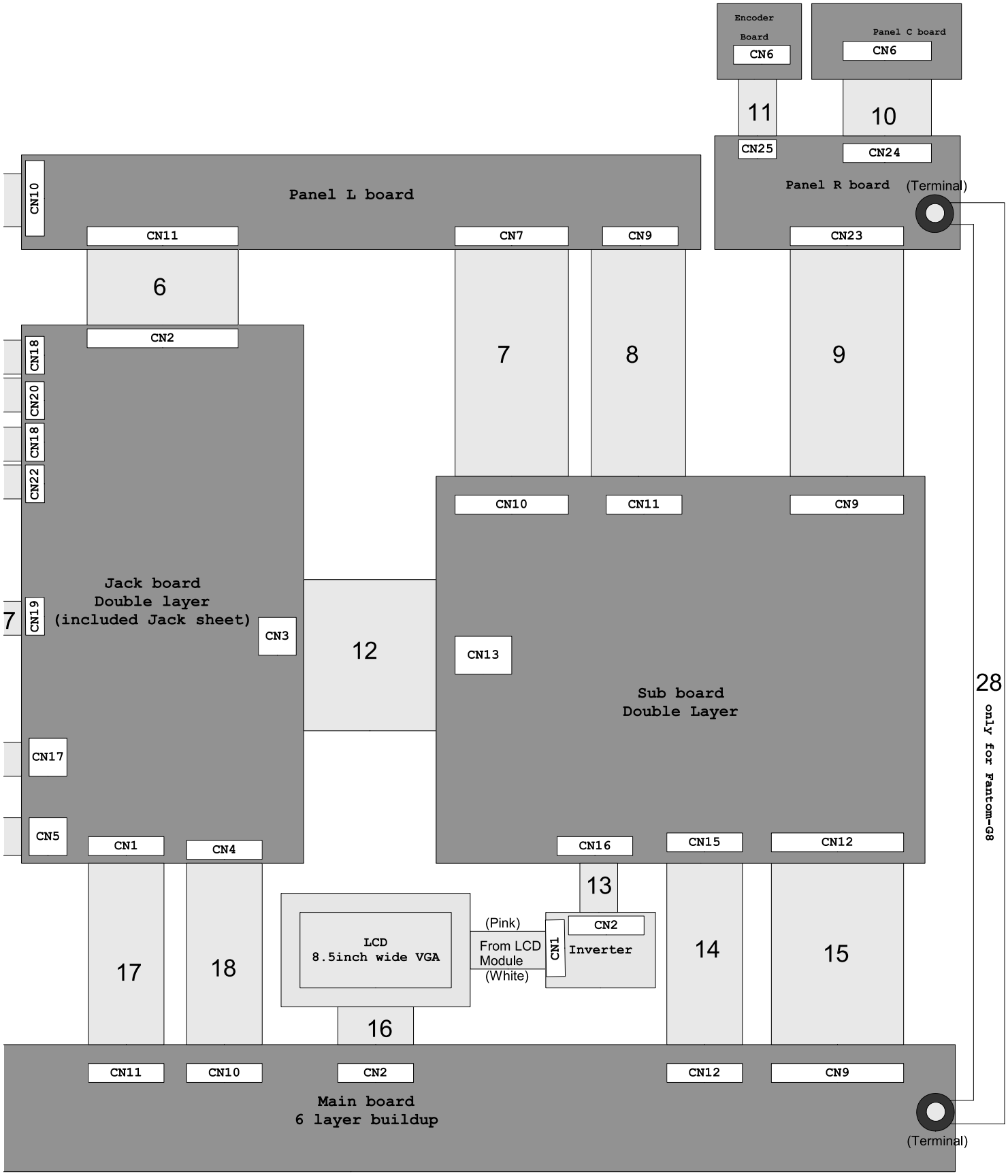



Encoder
Board
CN6
Panel C board
CN6
11
10
CN25
CN24
Panel L board
Panel R board
(Terminal)
CN10
CN11
CN7
CN9
CN23
6
7
8
9
CN2
CN18
CN20
CN18
CN22
CN10
CN11
CN9
Jack board
Double layer
(included Jack sheet)
CN19
CN3
12
CN13
Sub board
Double Layer
28
only for Fantom-G8
CN17
CN5
CN1
CN4
CN16
CN15
CN12
13
LCD
8.5inch wide VGA
(Pink)
From LCD
Module
(White)
CN1
CN2
Inverter
14
15
17
18
16
CN11
CN10
CN2
CN12
CN9
Main board
6 layer buildup
(Terminal)

Wiring Diagram (Fantom-G8)

No.	Part Code	Part Name	Description		Q'ty
1	05011178	WIRING	W1	included in Power Supply Assy	1
2	05011312	WIRING	W1	included in Power Supply Assy	1
3	05011323	WIRING	W2	included in Power Supply Assy	1
4	02341978	WIRING	4X100-P2.0-PHR-PHR-F		1
5	05011334	BAN CARD	FWR-P=1.00-K-10-450		1
6	05011345	WIRING	W3		1
7	05011212	BAN CARD	FWR-P=1.00-K-36-240		1
8	05011223	BAN CARD	FWR-P=1.00-K-14-320		1
9	05011234	BAN CARD	FWR-P=1.00-K-40-340		1
10	05011245	BAN CARD	FWR-P=1.00-K-10-140		1
11	02341967	WIRING	4X50-P2.0-PHR-PHR-F		1
12	04902378	BAN CARD	FWR-P=1.00-K-16-300		1
13	02343212	WIRING	6X50-P2.0-PHR-PHR-F		1
14	02341989	WIRING	4X150-P2.0-PHR-PHR-F		1
15	05011378	BAN CARD	FWR-P=1.00-K-12-400		1
16	05011356	BAN CARD	SFWR-S-P=0.5-K-40-260 GS-2/4		1
17	02344189	WIRING	14X400-P2.0-PHR-PHR-F		1
18	02343234	WIRING	6X150-P2.0-PHR-PHR-F		1
19	04566934	WIRING	W5	included in Inlet Board Assy	1
20	02341856	WIRING	3X700-P2.0-PHR-PHR-F		1
25	04672790	BAN CARD	FWR-P=1.25-K-16-380		1
26	05011367	BAN CARD	FWR-P=1.25-K-22-340		1
27	05011389	BAN CARD	FWR-P=1.00-K-30-750		1
28	05015767	WIRING	W4		1

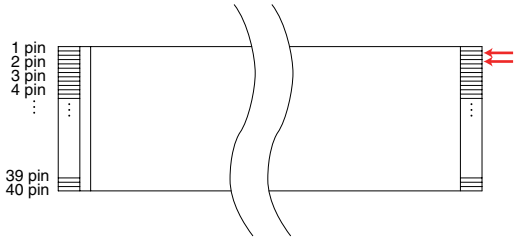



Encoder
Board
CN6
Panel C board
CN6
11
10
CN25
CN24
Panel L board
Panel R board
(Terminal)
CN10
CN11
CN7
CN9
CN23
6
7
8
9
CN2
CN18
CN20
CN18
CN22
CN10
CN11
CN9
Jack board
Double layer
(included Jack sheet)
CN19
CN3
12
CN13
Sub board
Double Layer
28
only for Fantom-G8
CN17
CN5
CN1
CN4
CN16
CN15
CN12
13
LCD
8.5inch wide VGA
(Pink)
From LCD
Module
(White)
CN1
CN2
Inverter
17
18
14
15
16
CN11
CN10
CN2
CN12
CN9
Main board
6 layer buildup
(Terminal)

Cautions for Connecting Wirings

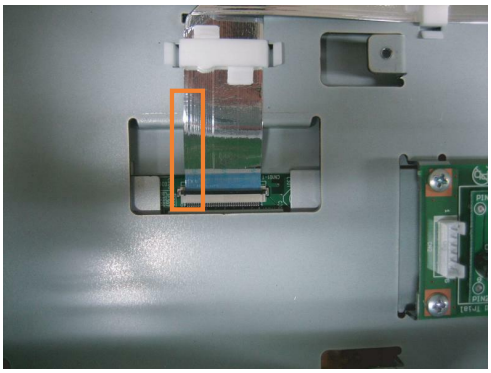
Wiring No.16 Installation Orientation

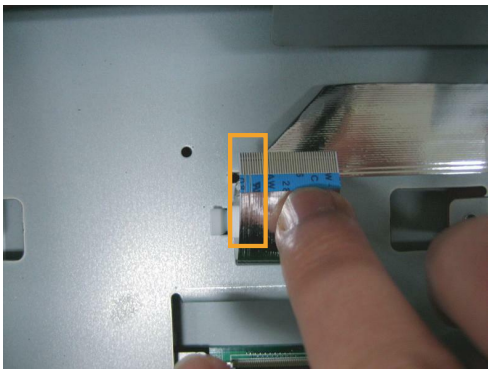
The wiring No.16 (Ban Card) configuration is shown in the figure below.



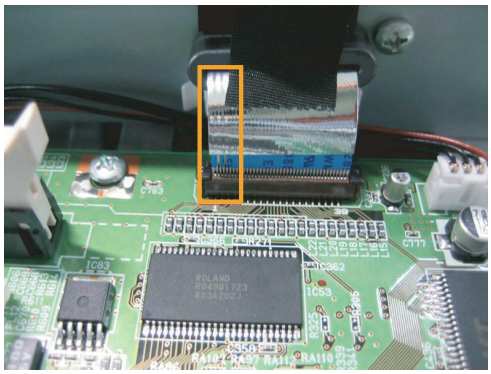
Both the No.2 and No.4 pins are shielded, and the installation orientation is fixed.

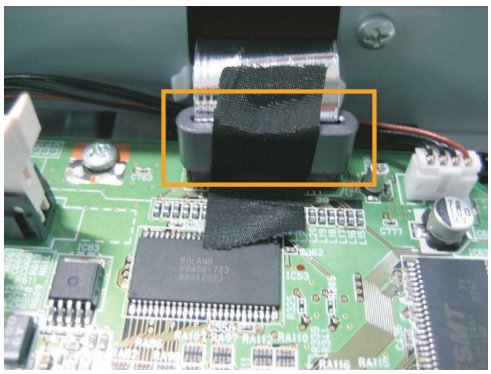
Connect shielded signal lines to the No.37 and No.39 pins at the LCD connector (see figure below).



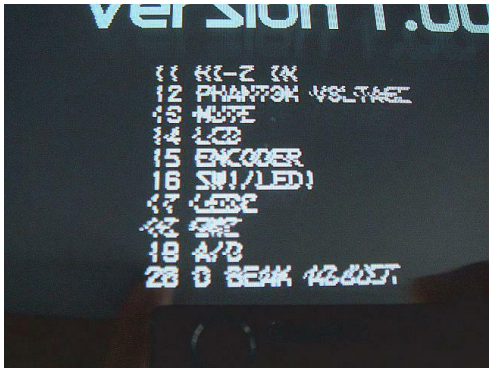


Connect shielded signal lines to the No.2 and No.4 pins of CN2 at the Main Board (see figure below). Also install a ferrite core (05011956 FERRITE-CORE ESD-FPL-27-8) at the Main Board side.





* *A reversed wiring orientation could cause image disturbances at the Test Mode screen.*

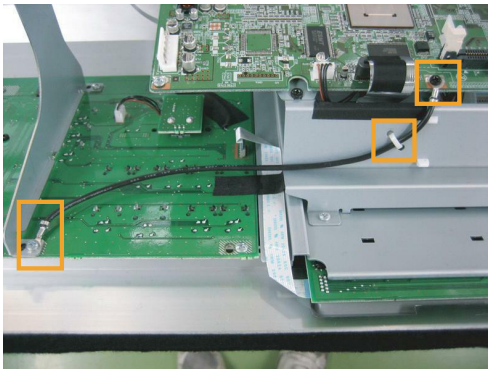


Wiring No.28 Installation

Wiring No.28 (05015767 WIRING W4) is used only at Fantom-G8.

Connection to the terminal is indicated at the right edge of the **Wiring Diagram** (p. 27). In actual practice, however, install as shown in the photo below, being sure that the installation position and orientation are correct.

Use a cable clamp to secure the wiring to the Main Board Holder (#04903989).



Parts List (Fantom-G6)

Safety Precautions:
The parts marked ⚠ have safety-related characteristics. Use only listed parts for replacement.

Due to one or more of the following reasons, parts with parts code ******** cannot be supplied as service parts.

- Part supplied only as a component in a complete assembly
- Copyright does not permit the part to be supplied
- Part is sold commercially

Note: The parts marked # are new. (initial parts) The description "Q'ty" means a necessary number of the parts per one product.

CASING

	01343089	ESCUTCHEON	D-BEAM CONTROLLER ESCT BLK	1
	03122067	RUBBER SW ESCT		1
	04566290	BENDER PANEL		1
	04566301	END BLOCK		1
#	04569456	TOP PANEL		1
#	04896867	DISPLAY ESCT		1
#	04896878	D S-ESCT	SX4H-B BLK L=45	2
#	04902601	DISPLAY COVER		1
#	04902623	EXP COVER		1
#	04902645	LED COVER		1
#	04902689	USB ESCT		1
#	04902701	BOTTOM COVER		1
#	73895101	SIDE COVER L ASSY		1
#	73895112	SIDE COVER R ASSY		1
#	73895301	BOTTOM COVER ASSY		1

CHASSIS

	01786045	SW HOLDER	AT-217K	1
#	03675434	FRAME TAPE H		2
	04345723	FRAME TAPE H		2
	04566378	PANEL PWB HOLDER		2
#	04902612	DISPLAY HOLDER		1
#	04902667	PWB HOLDER MAIN		1
	04566334	SIDE HOLDER L		1
	04566345	SIDE HOLDER R		1
#	04566401	KBD HOLDER		1
#	04566412	KBD HOLDER SIDE L		1
#	04566423	KBD HOLDER SIDE R		1
#	04902656	PWB ANGLE		1

KNOB, BUTTON

	01129767	D S-KEYTOP	SX1H DRD	1
	02013090	F C-KEYTOP	MX1H CLR	1
	03120889	D S-KEYTOP	SX2H-B GRS	8
	03120890	D S-KEYTOP	SX1H-B GRS	15
	03126867	D S-KEYTOP	SX1H-B CLR	4
	03126878	D S-KEYTOP	SX1H-B BLK	8
	04124267	J R-KNOB SF-ELA BLK/SLV	990-05045-10-08	5
	04565478	KNOB	ZE R-KNOB LF	1
	04566445	KEYTOP	ZE CURSOR KEY A	1
	04566456	KEYTOP	ZE CURSOR KEY B	1
#	04896834	RUBBER SW		1
#	04900001	KEYTOP PLAY		1
#	04900012	KEYTOP REC		1
#	04900023	KEYTOP STOP		1
	22485295	D S-KNOB	S BLK/LCG	8
	22495278	DS-KEYTOP	MD2H BLK (W/WINDOW)	1
	22495279	D S-KEYTOP	MD3H BLK 249-279 (W/WINDOW)	1

SWITCH

	⚠	01786012	SEESAW SWITCH	JW-M11RKK		1
		02781634	TACT SWITCH	SKRGAED010	SW1, SW2 on Bender SW Board, SW1 on Main Board, SW1, SW2, SW3, SW4, SW5, SW6, SW7, SW8, SW9, SW10 on Panel-C Board, SW11, SW12, SW13, SW14, SW15, SW19, SW20, SW21, SW22, SW23, SW24, SW25, SW26, SW27, SW28, SW29, SW30, SW31, SW32, SW33, SW34, SW35, SW36, SW37, SW38 on Panel-L Board, SW6, SW7, SW8, SW9, SW10, SW11, SW12, SW13, SW14, SW15, SW16, SW17, SW18, SW19, SW20, SW21, SW22 on Panel-R Board	54
#		04675934	TACT SWITCH EVQPVA05K		SW16, SW17, SW18 on Panel-L Board	3
		13159362	SLIDE SWITCH	SSSF123-S09N-1	SW23 on Jack Board	1

JACK, EXT TERMINAL

	⚠	02232412	XLR CONNECTOR	NCJ6FI-H-0	JK12 on Jack Board	1
		02781189	USB CONNECTOR B TYPE FEMALE	YKF45-0021N	JK75 on Main Board	1
		03231812	RCA (PIN)	YKC21-4173	JK74 on Main Board	1
		04560101	USB CONNECTOR A TYPE FEMALE	UAR27-4K5J00	JK2, JK3 on Main Board	2
		13429274	MIDI SOCKET	YKF51-5041	JK11 on Jack Board	1
		13449252	6.5MM JACK	YKB21-5006 (STEREO W/SW)	JK6 on Jack Board	1
		13449275	6.5MM JACK	YKB21-5074	JK1, JK2, JK3, JK4, JK5, JK7, JK8, JK9, JK10 on Jack Board	9

DISPLAY UNIT

#		04896756	LED HDSP-U211-CD000		LED23, LED24, LED25, LED26 on Panel-L Board	4
#	⚠	05010989	LCD TCG085WV1AC-G04			1

POWER SUPPLY UNIT

#	⚠	73895090	POWER SUPPLY ASSY			1

BENDER UNIT

		03234723	BENDER	PB-H0204		1

KEYBOARD ASSY

		73780967	KEYBOARD ASSY	SK-1061-A		1

PWB ASSY

#	⚠	73895123	MAIN BOARD TOTAL			1
#	⚠	73895167	JACK BOARD ASSY			1
#		73895178	PANEL-R KEYTOP ASSY			1
#		73895190	ENCODER BOARD ASSY			1
#		73895201	SUB CPU BOARD ASSY			1
#		73895212	BENDER SW BOARD ASSY			1
#		73895234	PANEL-L KEYTOP ASSY			1
#		73895256	PANEL-C KEYTOP ASSY			1
#	⚠	73895278	INLET BOARD ASSY			1
#	⚠	73895289	INVERTER BOARD ASSY			1

DIODE

		01239867	LED (RED/GREEN) CLR	SML72423C TP15	LED27 on Panel-L Board	1
		01784556	LED	SLI-343URCT32W	LED6, LED10, LED14, LED15, LED20, LED21 on Panel-L Board, LED26 on Panel-R Board	7
		01900612	DIODE	TPS611 (F)	Q3 on Panel-L Board	1
		02125167	LED (YELOW)	SLI-343DCT32W	LED1, LED2 on Bender SW Board, LED1 on Panel-C Board, LED1, LED3, LED4, LED5, LED7, LED8, LED9, LED12, LED13, LED17, LED18, LED19 on Panel-L Board, LED7, LED12, LED18, LED19, LED25 on Panel-R Board	20
		03126134	LED (INFRARED)	TLN233 (F)	LED2 on Panel-L Board	1
		03230656	LED (RED)	SLR-343VCT32	LED16 on Panel-L Board	1
		03904323	LED	SLR-343BTCT32		2
		03565423	LED	TLOU1002A(T02)	LED3, LED4, LED5, LED6, LED8, LED9, LED10, LED11, LED13, LED14, LED15, LED16, LED17, LED20, LED21, LED22, LED23, LED24 on Panel-R Board	18

POTENTIOMETER

		01787545	9M/M ROTARY POTENTIOM-ETER	EVUF2KFK3B14 10KB	VR1, VR2, VR3, VR4 on Panel-L Board	4
		02781390	9M/M ROTARY POTENTIOM-ETER	RK09K12A0D0S 20KAX2	VR1 on Jack Board	1
#		04897256	SLIDE POT.	RS45111-0A10-C0-P1-B103	VR5, VR6, VR7, VR8, VR9, VR10, VR11, VR12 on Panel-L Board	8
#		04901712	ROTARY POT.	RK09K1110D4S	VR2 on Jack Board	1
		13289189	POTENTIOMETER	RK14K1240A2D L1=15 50KBX2	VR13 on Panel-L Board	1

INDUCTOR, COIL, FILTER

#		05011956	FERRITE-CORE ESD-FPL-27-8			1

ENCODER

		01905467	ROTARY ENCODER	EVE GC1 F20 24B	EN1 on Encoder Board	1

CONNECTOR

		01908645	CONNECTOR	16FE-BT-VK-N	CN18 on Jack Board	1
		01908656	CONNECTOR	18FE-BT-VK-N	CN20 on Jack Board	1
		02011912	CONNECTOR	14FMN-BTK	CN11 on Sub CPU Board	1
		02011934	CONNECTOR	16FMN-BTK	CN13 on Sub CPU Board, CN3 on Jack Board	2
#		02012145	CONNECTOR	36FMN-BTK-A (LF) (SN)	CN10 on Sub CPU Board	1
		02012189	CONNECTOR	40FMN-BTK-A (LF) (SN)	CN9 on Sub CPU Board	1
		02235467	CONNECTOR	14FMN-STK	CN9 on Panel-L Board	1
		02782467	CONNECTOR	10FMN-BTK	CN10 on Panel-L Board, CN24 on Panel-R Board	2
		02782478	CONNECTOR	10FMN-STK	CN8 on Bender SW Board, CN6 on Panel-C Board	2
		02900534	CONNECTOR	12FMN-BTK	CN9 on Main Board, CN12 on Sub CPU Board	2
		04010589	CONNECTOR	40FMN-STK-A (LF) (SN)	CN23 on Panel-R Board	1
#		04560112	CONNECTOR	36FMN-STK-A (LF) (SN)	CN7 on Panel-L Board	1
		13369541	CONNECTOR	B10B-PH-K-S (LF) (SN)	CN14 on Main Board, CN2 on Jack Board	1
		13369563	CONNECTOR	B14B-PH-K-S (LF) (SN) JST	CN11 on Main Board, CN1 on Jack Board	2
		13369566	CONNECTOR	B6B-PH-K-S JST (LF) (SN) (6P)	CN2 on Inverter Board, CN10, CN13 on Main Board, CN16 on Sub CPU Board, CN4 on Jack	4
		13369567	CONNECTOR	B4B-PH-K-S JST (LF) (SN) (4P)	CN12 on Main Board, CN25 on Panel-R Board, CN15 on Sub CPU Board	3
		13369595	CONNECTOR	B3B-XH-A JST	CN5 on Jack Board	1
		13369664	CONNECTOR	S4B-PH-K-S (LF/SN) (4P)	CN7 on Bender SW Board, CN6 on Encoder Board	2
		13369670	CONNECTOR 10P	S10B-PH-K-S (LF/SN)	CN11 on Panel-L Board	1
	⚠	13369898	CONNECTOR	B2P3-VH (LF) (SN) 7A/250V	CN3 on Inlet Board	1
	⚠	13369914	CONNECTOR	B6P-VH (LF) (SN) 7A250V	CN3 on Main Board	1

WIRING, CABLE

		02341967	WIRING	4X50-P2.0-PHR-PHR-F		1
		02341978	WIRING	4X100-P2.0-PHR-PHR-F		1
		02342012	WIRING	4X200-P2.0-PHR-PHR-F		1
		02343212	WIRING	6X50-P2.0-PHR-PHR-F		1
		02343245	WIRING	6X200-P2.0-PHR-PHR-F		1
		02343823	WIRING	10X200-P2.0-PHR-PHR-F		1
		02344189	WIRING	14X400-P2.0-PHR-PHR-F		1
#	⚠	04566934	WIRING	W5	included in Inlet Board Assy	1
		04569601	BAN CARD	FWR-P=1.00-K-16-180		1
		04785990	BAN CARD	FWR-P=1.25-K-16-400		1
#		05011178	WIRING	W1	included in Power Supply Assy	1
#		05011189	WIRING	W2	included in Power Supply Assy	1
#		05011190	WIRING	W3	included in Power Supply Assy	1
#		05011201	BAN CARD	FWR-P=1.00-K-10-220		1
#		05011212	BAN CARD	FWR-P=1.00-K-36-240		1
#		05011223	BAN CARD	FWR-P=1.00-K-14-320		1
#		05011234	BAN CARD	FWR-P=1.00-K-40-340		1
#		05011245	BAN CARD	FWR-P=1.00-K-10-140		1
#		05011256	BAN CARD	FWR-P=1.00-K-12-450		1
#		05011267	BAN CARD	SFWR-S-P=0.5-K-40-300 GS-2/4		1
#		05011278	BAN CARD	FWR-P=1.25-K-18-400		1

TRANSFORMER

		02563501	PULSE TRANS	PT-10 (2280-T008)	T1 on Main Board	1
	⚠	04907367	EL-INVERTOR TRANS DHE2105B		MOD1 on Inverter Board	1

AC INLET, OUTLET

		00125023	AC INLET	PWI1818 (INL-7) 10A/250V 3P	JK1 on Inlet Board	1

PICK UP, SENSOR

		03128767	PRESSURE SENSOR SHEET			1

SCREWS

		40010345	SCREW M4X10	BINDING MACHINE FE BZC		1
		40011067	SCREW 3X8	BINDING TAPTITE B FE ZC		53
		40011101	SCREW 3X8	BINDING TAPTITE B BZC		11
		40011123	SCREW 4X8	BINDING TAPTITE B BZC		19
		40011312	SCREW 3X8	BINDING TAPTITE P BZC		42
		40011501	SCREW M3X8	PAN MACHINE W/SW BZC		4
		40011745	HEX NUT M4	SPRING NUT FE ZC		1
		40012501	SCREW M4X12	BINDING TAPTITE P FE BZC		1
		40237101	SCREW M3X8	PAN MACHINE W/ SW+SMALL PW BZC		11
		40238501	SCREW 4X8	BINDING TAPTITE P BZC		2
		40344623	SCREW M4X8	PAN SEMS SCREW W/ SW+SMALL BZC		5
		40454045	SCREW 3X8	FLAT TAPTITEB NI FLANGE SOCKE		8
		40011056	SCREW 3X6	BINDING TAPTITE B ZC		10

PACKING

		04566534	PACKING PAD	L		1
		04566545	PACKING PAD	R		1
#		04902523	CENTER PAD LOWER			1
#		04902534	CENTER PAD UPPER			1
#		04902545	PACKING CASE			1

MISCELLANEOUS

		02673945	STAY	BENDER		1
		03786845	IC SOCKET	71251-0012	CN5 on Main Board	1
#	⚠	04902634	INSULATING SHEET BOTTOM			1
#		05019756	INSULATING SHEET PAD			1
		12169368	LED SPACER	LDS-40B		2
		12169391	LED SPACER	LH-5S-10		1
		12199584	GROUNDING TERMINAL	M1698	TER1 on Inlet Board, TER1, TER2, TER3, TER4 on Jack Board	5
		12359139	RUBBER FOOT	FF-018 BLK		4
		40016589	NYLON RIVET	NRP-335		2
		17041858	GREASE FOR KEY	MOLYKOTE G-1039 (100CC)		-
		17049543	GREASE FOR KEY	FLOIL G-336A WHITE 100C		-
	⚠	40679434	LABEL	CAUTION LABEL		1
	⚠	40679445	LABEL	XLR LABEL		1
	⚠	40784490	LABEL	STAND CAUTION LABEL		1
		01455523	CORD BUSHING	EDS-1717U		2
#		05012101	CLAMP	RFC-21V0		5
		40017378	COATING CLIP	CS-7		1
		40120967	COATING CLIP	CS-3		1

ACCESSORIES (Standard)

	⚠	03340956	AC CORD SET PSE	100V YA-101/YP-3NB/YC-13	for 100V	1
	⚠	00894378	AC CORD SET	120V SP301+IS14 SJT18/3	for 117V U/CS	2
	⚠	00894389	AC CORD SET	230V SP22+IS14 H05VV-F3G1.0	for 230V EU	2
	⚠	00907001	AC CORD SET	240VE SP-60+IS-14	for 240V E	1
	⚠	23495124	AC CORD SET	240VA SC-144-JO1 ES303-10HMA	for 240V A	1
	⚠	03450323	AC CORD SET	220V YP-36 YC-13D	for 220V CN	1
	⚠	04561701	AC CORD KR-KS2S-20B	230V (FOR KOREAN MARKET)	for 230V K	1
		40232334	WARRANTY CARD	MOCHIKOMI JAPAN ONLY		1
#		73895067	OWNER'S MANUAL	JAPANESE		1
			** This unit includes the following parts.*			
#		********	MANUAL TUTORIAL	JAPANESE		1
#		********	MANUAL REFERENCE	JAPANESE		1
#		********	MANUAL SOUND LIST	JAPANESE		1
#		********	LEAFLET INSTALL	JAPANESE		1
#		73897189	OWNER'S MANUAL	ENGLISH		1
			** This unit includes the following parts.*			
#		********	MANUAL TUTORIAL	ENGLISH		1
#		********	MANUAL REFERENCE	ENGLISH		1
#		********	MANUAL SOUND LIST	ENGLISH		1
#		********	LEAFLET INSTALL	ENGLISH		1

Parts List (Fantom-G7)

Safety Precautions:
The parts marked ⚠ have safety-related characteristics. Use only listed parts for replacement.

Due to one or more of the following reasons, parts with parts code ******** cannot be supplied as service parts.

- Part supplied only as a component in a complete assembly
- Copyright does not permit the part to be supplied
- Part is sold commercially

Note: The parts marked # are new. (initial parts) The description "Q'ty" means a necessary number of the parts per one product.

CASING

	01343089	ESCUTCHEON	D-BEAM CONTROLLER ESCT BLK	1
	03122067	RUBBER SW ESCT		1
	04566290	BENDER PANEL		1
	04566301	END BLOCK		1
#	04896867	DISPLAY ESCT		1
#	04896878	D S-ESCT	SX4H-B BLK L=45	2
#	04902601	DISPLAY COVER		1
#	04902623	EXP COVER		1
#	04902645	LED COVER		1
#	04902689	USB ESCT		1
#	04903845	TOP PANEL		1
#	04903867	BOTTOM COVER		1
#	73895101	SIDE COVER L ASSY		1
#	73895112	SIDE COVER R ASSY		1
#	73896234	BOTTOM COVER ASSY		1

CHASSIS

	01786045	SW HOLDER	AT-217K	1
#	03675434	FRAME TAPE H		2
	04345723	FRAME TAPE H		2
	04566378	PANEL PWB HOLDER		2
#	04902612	DISPLAY HOLDER		1
#	04902667	PWB HOLDER MAIN		1
	04566334	SIDE HOLDER L		1
	04566345	SIDE HOLDER R		1
#	04566401	KBD HOLDER		1
#	04566412	KBD HOLDER SIDE L		1
#	04566423	KBD HOLDER SIDE R		1
#	04902656	PWB ANGLE		1

KNOB, BUTTON

	01129767	D S-KEYTOP	SX1H DRD	1
	02013090	F C-KEYTOP	MX1H CLR	1
	03120889	D S-KEYTOP	SX2H-B GRS	8
	03120890	D S-KEYTOP	SX1H-B GRS	12
	03120890	D S-KEYTOP	SX1H-B GRS	1
	03120890	D S-KEYTOP	SX1H-B GRS	2
	03126867	D S-KEYTOP	SX1H-B CLR	4
	03126878	D S-KEYTOP	SX1H-B BLK	8
	04124267	J R-KNOB SF-ELA BLK/SLV	990-05045-10-08	5
	04565478	KNOB	ZE R-KNOB LF	1
	04566445	KEYTOP	ZE CURSOR KEY A	1
	04566456	KEYTOP	ZE CURSOR KEY B	1
#	04896834	RUBBER SW		1
#	04900001	KEYTOP PLAY		1
#	04900012	KEYTOP REC		1
#	04900023	KEYTOP STOP		1
	22485295	D S-KNOB	S BLK/LCG	8
	22495278	DS-KEYTOP	MD2H BLK (W/WINDOW)	1
	22495279	D S-KEYTOP	MD3H BLK 249-279(W/WINDOW)	1

SWITCH

	⚠	01786012	SEESAW SWITCH	JW-M11RKK		1
		02781634	TACT SWITCH	SKRGAED010	SW1, SW2 on Bender SW Board, SW1 on Main Board, SW1, SW2, SW3, SW4, SW5, SW6, SW7, SW8, SW9, SW10 on Panel-C Board, SW11, SW12, SW13, SW14, SW15, SW19, SW20, SW21, SW22, SW23, SW24, SW25, SW26, SW27, SW28, SW29, SW30, SW31, SW32, SW33, SW34, SW35, SW36, SW37, SW38 on Panel-L Board, SW6, SW7, SW8, SW9, SW10, SW11, SW12, SW13, SW14, SW15, SW16, SW17, SW18, SW19, SW20, SW21, SW22 on Panel-R Board	54
#		04675934	TACT SWITCH EVQPVA05K		SW16, SW17, SW18 on Panel-L Board	3
		13159362	SLIDE SWITCH	SSSF123-S09N-1	SW23 on Jack Board	1

JACK, EXT TERMINAL

	⚠	02232412	XLR CONNECTOR	NCJ6FI-H-0	JK12 on Jack Board	1
		02781189	USB CONNECTOR B TYPE FEMALE	YKF45-0021N	JK75 on Main Board	1
		03231812	RCA (PIN)	YKC21-4173	JK74 on Main Board	1
		04560101	USB CONNECTOR A TYPE FEMALE	UAR27-4K5J00	JK2, JK3 on Main Board	2
		13429274	MIDI SOCKET	YKF51-5041	JK11 on Jack Board	1
		13449252	6.5MM JACK	YKB21-5006 (STEREO W/SW)	JK6 on Jack Board	1
		13449275	6.5MM JACK	YKB21-5074	JK1, JK2, JK3, JK4, JK5, JK7, JK8, JK9, JK10 on Jack Board	9

DISPLAY UNIT

#		04896756	LED HDSP-U211-CD000		LED23, LED24, LED25, LED26 on Panel-L Board	4
#	⚠	05010989	LCD TCG085WV1AC-G04			1

POWER SUPPLY UNIT

#	⚠	73895090	POWER SUPPLY ASSY			1

BENDER UNIT

		03234723	BENDER	PB-H0204		1

KEYBOARD ASSY

#						1

PWB ASSY

#	⚠	73895123	MAIN BOARD TOTAL			1
#		73895178	PANEL-R KEYTOP ASSY			1
#		73895190	ENCODER BOARD ASSY			1
#		73895201	SUB CPU BOARD ASSY			1
#		73895212	BENDER SW BOARD ASSY			1
#		73895234	PANEL-L KEYTOP ASSY			1
#		73895256	PANEL-C KEYTOP ASSY			1
#	⚠	73895278	INLET BOARD ASSY			1
#	⚠	73895289	INVERTER BOARD ASSY			1
#	⚠	73896123	JACK BOARD ASSY			1

DIODE

		01239867	LED (RED/GREEN)CLR	SML72423C TP15	LED27 on Panel-L Board	1
		01784556	LED	SLI-343URCT32W	LED6, LED10, LED14, LED15, LED20, LED21 on Panel-L Board, LED26 on Panel-R Board	7
		01900612	DIODE	TPS611(F)	Q3 on Panel-L Board	1
		02125167	LED (YELOW)	SLI-343DCT32W	LED1, LED2 on Bender SW Board, LED1 on Panel-C Board, LED1, LED3, LED4, LED5, LED7, LED8, LED9, LED12, LED13, LED17, LED18, LED19 on Panel-L Board, LED7, LED12, LED18, LED19, LED25 on Panel-R Board	20
		03126134	LED (INFRARED)	TLN233 (F)	LED2 on Panel-L Board	1
		03230656	LED (RED)	SLR-343VCT32	LED16 on Panel-L Board	1
		03904323	LED	SLR-343BTCT32		2
		03565423	LED	TLOU1002A(T02)	LED3, LED4, LED5, LED6, LED8, LED9, LED10, LED11, LED13, LED14, LED15, LED16, LED17, LED20, LED21, LED22, LED23, LED24 on Panel-R Board	18

POTENTIOMETER

		01787545	9M/M ROTARY POTENTIOM-ETER	EVUF2KFK3B14 10KB	VR1, VR2, VR3, VR4 on Panel-L Board	4
		02781390	9M/M ROTARY POTENTIOM-ETER	RK09K12A0D0S 20KAX2	VR1 on Jack Board	1
#		04897256	SLIDE POT.	RS45111-0A10-C0-P1-B103	VR5, VR6, VR7, VR8, VR9, VR10, VR11, VR12 on Panel-L Board	8
#		04901712	ROTARY POT.	RK09K1110D4S	VR2 on Jack Board	1
		13289189	POTENTIOMETER	RK14K1240A2D L1=15 50KBX2	VR13 on Panel-L Board	1

INDUCTOR, COIL, FILTER

#		05011956	FERRITE-CORE ESD-FPL-27-8			1

ENCODER

		01905467	ROTARY ENCODER	EVE GC1 F20 24B	EN1 on Encoder Board	1

CONNECTOR

		01908645	CONNECTOR	16FE-BT-VK-N	CN18 on Jack Board	1
		01908667	CONNECTOR	22FE-BT-VK-N	CN21 on Jack Board	1
		02011912	CONNECTOR	14FMN-BTK	CN11 on Sub CPU Board	1
		02011934	CONNECTOR	16FMN-BTK	CN13 on Sub CPU Board, CN3 on Jack Board	2
#		02012145	CONNECTOR	36FMN-BTK-A (LF) (SN)	CN10 on Sub CPU Board	1
		02012189	CONNECTOR	40FMN-BTK-A (LF) (SN)	CN9 on Sub CPU Board	1
		02235467	CONNECTOR	14FMN-STK	CN9 on Panel-L Board	1
		02782467	CONNECTOR	10FMN-BTK	CN10 on Panel-L Board, CN24 on Panel-R Board	2
		02782478	CONNECTOR	10FMN-STK	CN8 on Bender SW Board, CN6 on Panel-C Board	2
		02900534	CONNECTOR	12FMN-BTK	CN9 on Main Board, CN12 on Sub CPU Board	2
		04010589	CONNECTOR	40FMN-STK-A (LF) (SN)	CN23 on Panel-R Board	1
#		04560112	CONNECTOR	36FMN-STK-A (LF) (SN)	CN7 on Panel-L Board	1
		13369541	CONNECTOR	B10B-PH-K-S (LF) (SN)	CN14 on Main Board, CN2 on Jack Board	1
		13369563	CONNECTOR	B14B-PH-K-S (LF) (SN) JST	CN11 on Main Board, CN1 on Jack Board	2
		13369566	CONNECTOR	B6B-PH-K-S JST (LF) (SN) (6P)	CN2 on Inverter Board, CN10, CN13 on Main Board, CN16 on Sub CPU Board, CN4 on Jack Board	4
		13369567	CONNECTOR	B4B-PH-K-S JST (LF) (SN) (4P)	CN12 on Main Board, CN25 on Panel-R Board, CN15 on Sub CPU Board	3
		13369595	CONNECTOR	B3B-XH-A JST	CN5 on Jack Board	1
		13369664	CONNECTOR	S4B-PH-K-S (LF/SN) (4P)	CN7 on Bender SW Board, CN6 on Encoder Board	2
		13369670	CONNECTOR 10P	S10B-PH-K-S (LF/SN)	CN11 on Panel-L Board	1
	⚠	13369898	CONNECTOR	B2P3-VH (LF) (SN) 7A/250V	CN3 on Inlet Board	1
	⚠	13369914	CONNECTOR	B6P-VH (LF) (SN) 7A250V	CN3 on Main Board	1

WIRING, CABLE

		02341967	WIRING	4X50-P2.0-PHR-PHR-F		1
		02341978	WIRING	4X100-P2.0-PHR-PHR-F		1
		02342012	WIRING	4X200-P2.0-PHR-PHR-F		1
		02343212	WIRING	6X50-P2.0-PHR-PHR-F		1
		02343245	WIRING	6X200-P2.0-PHR-PHR-F		1
		02343823	WIRING	10X200-P2.0-PHR-PHR-F		1
		02344189	WIRING	14X400-P2.0-PHR-PHR-F		1
#	⚠	04566934	WIRING	W5	included in Inlet Board Assy	1
		04569601	BAN CARD	FWR-P=1.00-K-16-180		1
#		05011178	WIRING	W1	included in Power Supply Assy	1
#		05011189	WIRING	W2	included in Power Supply Assy	1
#		05011190	WIRING	W3	included in Power Supply Assy	1
#		05011212	BAN CARD	FWR-P=1.00-K-36-240		1
#		05011223	BAN CARD	FWR-P=1.00-K-14-320		1
#		05011234	BAN CARD	FWR-P=1.00-K-40-340		1
#		05011245	BAN CARD	FWR-P=1.00-K-10-140		1
#		05011256	BAN CARD	FWR-P=1.00-K-12-450		1
#		05011267	BAN CARD	SFWR-S-P=0.5-K-40-300 GS-2/4		1
#		05011289	BAN CARD	FWR-P=1.00-K-10-320		1
#		05011290	BAN CARD	FWR-P=1.25-K-16-280		1
#		05011301	BAN CARD	FWR-P=1.25-K-22-320		1

TRANSFORMER

		02563501	PULSE TRANS	PT-10 (2280-T008)	T1 on Main Board	1
	⚠	04907367	EL-INVERTOR TRANS DHE2105B		MOD1 on Inverter Board	1

AC INLET, OUTLET

		00125023	AC INLET	PWI1818 (INL-7) 10A/250V 3P	JK1 on Inlet Board	1

PICK UP, SENSOR

	03128767	PRESSURE SENSOR SHEET			1

SCREWS

	40010345	SCREW M4X10	BINDING MACHINE FE BZC		1
	40011067	SCREW 3X8	BINDING TAPTITE B FE ZC		53
	40011101	SCREW 3X8	BINDING TAPTITE B BZC		11
	40011123	SCREW 4X8	BINDING TAPTITE B BZC		20
	40011312	SCREW 3X8	BINDING TAPTITE P BZC		42
	40011501	SCREW M3X8	PAN MACHINE W/SW BZC		4
	40011745	HEX NUT M4	SPRING NUT FE ZC		1
	40012501	SCREW M4X12	BINDING TAPTITE P FE BZC		1
	40237101	SCREW M3X8	PAN MACHINE W/ SW+SMALL PW BZC		11
	40238501	SCREW 4X8	BINDING TAPTITE P BZC		2
	40344623	SCREW M4X8	PAN SEMS SCREW W/ SW+SMALL BZC		8
	40454045	SCREW 3X8	FLAT TAPTITEB NI FLANGE SOCKE		8
	40011056	SCREW 3X6	BINDING TAPTITE B ZC		10

PACKING

	04566534	PACKING PAD	L		1
	04566545	PACKING PAD	R		1
#	04902523	CENTER PAD LOWER			1
#	04902534	CENTER PAD UPPER			1
#	04903823	PACKING CASE			1
#	05012123	PAD SPACER			1

MISCELLANEOUS

	02673945	STAY	BENDER		1
	03786845	IC SOCKET	71251-0012	CN5 on Main Board	1
# ⚠	04902634	INSULATING SHEET BOTTOM			1
#	05019756	INSULATING SHEET PAD			1
	12169368	LED SPACER	LDS-40B		2
	12169391	LED SPACER	LH-5S-10		1
	12199584	GROUNDING TERMINAL	M1698	TER1 on Inlet Board, TER1, TER2, TER3, TER4 on Jack Board	5
	12359139	RUBBER FOOT	FF-018 BLK		4
	40016589	NYLON RIVET	NRP-335		2
	17041858	GREASE FOR KEY	MOLYKOTE G-1039 (100CC)		-
	17049543	GREASE FOR KEY	FLOIL G-336A WHITE 100C		-
⚠	40679434	LABEL	CAUTION LABEL		1
⚠	40679445	LABEL	XLR LABEL		1
⚠	40784490	LABEL	STAND CAUTION LABEL		1
	01455523	CORD BUSHING	EDS-1717U		2
#	05012101	CLAMP	RFC-21V0		5
	40017378	COATING CLIP	CS-7		1
	40120967	COATING CLIP	CS-3		1

ACCESSORIES (Standard)

⚠	03340956	AC CORD SET PSE	100V YA-101/YP-3NB/YC-13	for 100V	1
⚠	00894378	AC CORD SET	120V SP301+IS14 SJT18/3	for 117V U/CS	2
⚠	00894389	AC CORD SET	230V SP22+IS14 H05VV-F3G1.0	for 230V EU	2
⚠	00907001	AC CORD SET	240VE SP-60+IS-14	for 240V E	1
⚠	23495124	AC CORD SET	240VA SC-144-JO1 ES303-10HMA	for 240V A	1
⚠	03450323	AC CORD SET	220V YP-36 YC-13D	for 220V CN	1
⚠	04561701	AC CORD KR-KS2S-20B	230V (FOR KOREAN MARKET)	for 230V K	1
	40232334	WARRANTY CARD	MOCHIKOMI JAPAN ONLY		1
#	73895067	OWNER'S MANUAL	JAPANESE		1
	* *This unit includes the following parts.*				
#	*******	MANUAL TUTORIAL	JAPANESE		1
#	*******	MANUAL REFERENCE	JAPANESE		1
#	*******	MANUAL SOUND LIST	JAPANESE		1
#	*******	LEAFLET INSTALL	JAPANESE		1
#	73897189	OWNER'S MANUAL	ENGLISH		1
	* *This unit includes the following parts.*				
#	*******	MANUAL TUTORIAL	ENGLISH		1
#	*******	MANUAL REFERENCE	ENGLISH		1
#	*******	MANUAL SOUND LIST	ENGLISH		1
#	*******	LEAFLET INSTALL	ENGLISH		1

Parts List (Fantom-G8)

Safety Precautions:
The parts marked ⚠ have safety-related characteristics. Use only listed parts for replacement.

Due to one or more of the following reasons, parts with parts code ******** cannot be supplied as service parts.

- Part supplied only as a component in a complete assembly
- Copyright does not permit the part to be supplied
- Part is sold commercially

Note: The parts marked # are new. (initial parts) The description "Q'ty" means a necessary number of the parts per one product.

CASING

		01343089	ESCUTCHEON	D-BEAM CONTROLLER ESCT BLK	1
		03122067	RUBBER SW ESCT		1
#		04781056	TOP PANEL		1
#		04896867	DISPLAY ESCT		1
#		04896878	D S-ESCT	SX4H-B BLK L=45	2
#		04902601	DISPLAY COVER		1
#		04902645	LED COVER		1
#		04902689	USB ESCT		1
#		04903945	EXP COVER		1
#		04904189	BLIND		1
#		73896323	SIDE PANEL L ASSY		1
#		73896334	SIDE PANEL R ASSY		1
#		73896490	BOTTOM BOARD ASSY		1
		04892967	BENDER PANEL		1
		04892978	END BLOCK		1

CHASSIS

		00128089	END BLOCK HOLDER		2
		01786045	SW HOLDER	AT-217K	1
#		03675434	FRAME TAPE H		2
		04345723	FRAME TAPE H		2
#		04902612	DISPLAY HOLDER		1
#		04902667	PWB HOLDER MAIN		1
#		04903989	MAIN BOARD HOLDER		1
#	⚠	04904001	BOTTOM ANGLE A		1
#	⚠	04904012	BOTTOM ANGLE B		1
#		04904023	PANEL ANGLE		2

KNOB, BUTTON

		01129767	D S-KEYTOP	SX1H DRD	1
		02013090	F C-KEYTOP	MX1H CLR	1
		03120889	D S-KEYTOP	SX2H-B GRS	8
		03120890	D S-KEYTOP	SX1H-B GRS	1
		03120890	D S-KEYTOP	SX1H-B GRS	2
		03120890	D S-KEYTOP	SX1H-B GRS	12
		03126867	D S-KEYTOP	SX1H-B CLR	4
		03126878	D S-KEYTOP	SX1H-B BLK	8
		04124267	J R-KNOB SF-ELA BLK/SLV	990-05045-10-08	5
		04565478	KNOB	ZE R-KNOB LF	1
		04566445	KEYTOP	ZE CURSOR KEY A	1
		04566456	KEYTOP	ZE CURSOR KEY B	1
#		04896834	RUBBER SW		1
#		04900001	KEYTOP PLAY		1
#		04900012	KEYTOP REC		1
#		04900023	KEYTOP STOP		1
		22485295	D S-KNOB	S BLK/LCG	8
		22495278	DS-KEYTOP	MD2H BLK (W/WINDOW)	1
		22495279	D S-KEYTOP	MD3H BLK 249-279(W/WINDOW)	1

SWITCH

	⚠	01786012	SEESAW SWITCH	JW-M11RKK		1
		02781634	TACT SWITCH	SKRGAED010	SW1, SW2 on Bender SW Board, SW1 on Main Board, SW1, SW2, SW3, SW4, SW5, SW6, SW7, SW8, SW9, SW10 on Panel-C Board, SW11, SW12, SW13, SW14, SW15, SW19, SW20, SW21, SW22, SW23, SW24, SW25, SW26, SW27, SW28, SW29, SW30, SW31, SW32, SW33, SW34, SW35, SW36, SW37, SW38 on Panel-L Board, SW6, SW7, SW8, SW9, SW10, SW11, SW12, SW13, SW14, SW15, SW16, SW17, SW18, SW19, SW20, SW21, SW22 on Panel-R Board	54
#		04675934	TACT SWITCH EVQPVA05K		SW16, SW17, SW18 on Panel-L Board	3
		13159362	SLIDE SWITCH	SSSF123-S09N-1	SW23 on Jack Board	1

JACK, EXT TERMINAL

	⚠	02232412	XLR CONNECTOR	NCJ6FI-H-0	JK12 on Jack Board	1
		02781189	USB CONNECTOR B TYPE FEMALE	YKF45-0021N	JK75 on Main Board	1
		03231812	RCA (PIN)	YKC21-4173	JK74 on Main Board	1
		04560101	USB CONNECTOR A TYPE FEMALE	UAR27-4K5J00	JK2, JK3 on Main Board	2
		13429274	MIDI SOCKET	YKF51-5041	JK11 on Jack Board	1
		13449252	6.5MM JACK	YKB21-5006 (STEREO W/SW)	JK6 on Jack Board	1
		13449275	6.5MM JACK	YKB21-5074	JK1, JK2, JK3, JK4, JK5, JK7, JK8, JK9, JK10 on Jack Board	9

DISPLAY UNIT

#		04896756	LED HDSP-U211-CD000		LED23, LED24, LED25, LED26 on Panel-L Board	4
#	⚠	05010989	LCD TCG085WV1AC-G04			1

POWER SUPPLY UNIT

#	⚠	73896312	POWER SUPPLY ASSY			1

BENDER UNIT

		03234723	BENDER	PB-H0204		1

KEYBOARD ASSY

#						1

PWB ASSY

#	⚠	73895123	MAIN BOARD TOTAL			1
#		73895178	PANEL-R KEYTOP ASSY			1
#		73895190	ENCODER BOARD ASSY			1
#		73895201	SUB CPU BOARD ASSY			1
#		73895212	BENDER SW BOARD ASSY			1
#		73895234	PANEL-L KEYTOP ASSY			1
#		73895256	PANEL-C KEYTOP ASSY			1
#	⚠	73895278	INLET BOARD ASSY			1
#	⚠	73895289	INVERTER BOARD ASSY			1
#	⚠	73896356	JACK BOARD ASSY			1
#		73896378	AFTER BOARD ASSY			1
#		73896389	KEY LINK BOARD ASSY			1

DIODE

		01239867	LED (RED/GREEN)CLR	SML72423C TP15	LED27 on Panel-L Board	1
		01784556	LED	SLI-343URCT32W	LED6, LED10, LED14, LED15, LED20, LED21 on Panel-L Board, LED26 on Panel-R Board	7
		01900612	DIODE	TPS611(F)	Q3 on Panel-L Board	1
		02125167	LED (YELOW)	SLI-343DCT32W	LED1, LED2 on Bender SW Board, LED1 on Panel-C Board, LED1, LED3, LED4, LED5, LED7, LED8, LED9, LED12, LED13, LED17, LED18, LED19 on Panel-L Board, LED7, LED12, LED18, LED19, LED25 on Panel-R Board	20
		03126134	LED (INFRARED)	TLN233 (F)	LED2 on Panel-L Board	1
		03230656	LED (RED)	SLR-343VCT32	LED16 on Panel-L Board	1
		03904323	LED	SLR-343BTCT32		2
		03565423	LED	TLOU1002A(T02)	LED3, LED4, LED5, LED6, LED8, LED9, LED10, LED11, LED13, LED14, LED15, LED16, LED17, LED20, LED21, LED22, LED23, LED24 on Panel-R Board	18

POTENTIOMETER

		01787545	9M/M ROTARY POTENTIOM-ETER	EVUF2KFK3B14 10KB	VR1, VR2, VR3, VR4 on Panel-L Board	4
		02781390	9M/M ROTARY POTENTIOM-ETER	RK09K12A0D0S 20KAX2	VR1 on Jack Board	1
#		04897256	SLIDE POT.	RS45111-0A10-C0-P1-B103	VR5, VR6, VR7, VR8, VR9, VR10, VR11, VR12 on Panel-L Board	8
#		04901712	ROTARY POT.	RK09K1110D4S	VR2 on Jack Board	1
		13289189	POTENTIOMETER	RK14K1240A2D L1=15 50KBX2	VR13 on Panel-L Board	1

INDUCTOR, COIL, FILTER

#		05011956	FERRITE-CORE ESD-FPL-27-8			1

ENCODER

		01905467	ROTARY ENCODER	EVE GC1 F20 24B	EN1 on Encoder Board	1

CONNECTOR

		01908645	CONNECTOR	16FE-BT-VK-N	CN18 on Jack Board, CN14 on Key Link Board	2
		01908667	CONNECTOR	22FE-BT-VK-N	CN21 on Jack Board, CN13 on Key Link Board	2
		02011912	CONNECTOR	14FMN-BTK	CN11 on Sub CPU Board	1
		02011934	CONNECTOR	16FMN-BTK	CN13 on Sub CPU Board, CN3 on Jack Board	2
		02012089	CONNECTOR	30FMN-BTK	CN19 on Jack Board, CN12 on Key Link Board	2
#		02012145	CONNECTOR	36FMN-BTK-A (LF) (SN)	CN10 on Sub CPU Board	1
		02012189	CONNECTOR	40FMN-BTK-A (LF) (SN)	CN9 on Sub CPU Board	1
		02235467	CONNECTOR	14FMN-STK	CN9 on Panel-L Board	1
		02782467	CONNECTOR	10FMN-BTK	CN10 on Panel-L Board, CN24 on Panel-R Board	2
		02782478	CONNECTOR	10FMN-STK	CN8 on Bender SW Board, CN6 on Panel-C Board	2
		02900534	CONNECTOR	12FMN-BTK	CN9 on Main Board, CN12 on Sub CPU Board	2
		03901890	CONNECTOR	00-8370-049-000-800	CN4 on After Board	1
		04010589	CONNECTOR	40FMN-STK-A (LF) (SN)	CN23 on Panel-R Board	1
#		04560112	CONNECTOR	36FMN-STK-A (LF) (SN)	CN7 on Panel-L Board	1
		13369541	CONNECTOR	B10B-PH-K-S (LF) (SN)	CN14 on Main Board, CN2 on Jack Board	1
		13369563	CONNECTOR	B14B-PH-K-S (LF) (SN) JST	CN11 on Main Board, CN1 on Jack Board	2
		13369566	CONNECTOR	B6B-PH-K-S JST (LF) (SN) (6P)	CN2 on Inverter Board, CN10, CN13 on Main Board, CN16 on Sub CPU Board, CN4 on Jack Board	4
		13369567	CONNECTOR	B4B-PH-K-S JST (LF) (SN) (4P)	CN12 on Main Board, CN25 on Panel-R Board, CN15 on Sub CPU Board	3
		13369568	CONNECTOR	JST B3B-PH-K-S (LF) (SN)	CN17 on Jack Board, CN5 on After Board	2
		13369595	CONNECTOR	B3B-XH-A JST	CN5 on Jack Board	1
		13369664	CONNECTOR	S4B-PH-K-S (LF/SN) (4P)	CN7 on Bender SW Board, CN6 on Encoder Board	2
		13369670	CONNECTOR 10P	S10B-PH-K-S (LF/SN)	CN11 on Panel-L Board	1
	⚠	13369898	CONNECTOR	B2P3-VH (LF) (SN) 7A/250V	CN3 on Inlet Board	1
	⚠	13369914	CONNECTOR	B6P-VH (LF) (SN) 7A250V	CN3 on Main Board	1

WIRING, CABLE

		02341856	WIRING	3X700-P2.0-PHR-PHR-F		1
		02341967	WIRING	4X50-P2.0-PHR-PHR-F		1
		02341978	WIRING	4X100-P2.0-PHR-PHR-F		1
		02341989	WIRING	4X150-P2.0-PHR-PHR-F		1
		02343212	WIRING	6X50-P2.0-PHR-PHR-F		1
		02343234	WIRING	6X150-P2.0-PHR-PHR-F		1
		02344189	WIRING	14X400-P2.0-PHR-PHR-F		1
#	⚠	04566934	WIRING	W5	included in Inlet Board Assy	1
		04672790	BAN CARD	FWR-P=1.25-K-16-380		1
#		05011178	WIRING	W1	included in Power Supply Assy	1
#		05011312	WIRING	W1	included in Power Supply Assy	1
#		05011323	WIRING	W2	included in Power Supply Assy	1
		04902378	BAN CARD	FWR-P=1.00-K-16-300		1
#		05011212	BAN CARD	FWR-P=1.00-K-36-240		1
#		05011223	BAN CARD	FWR-P=1.00-K-14-320		1
#		05011234	BAN CARD	FWR-P=1.00-K-40-340		1
#		05011245	BAN CARD	FWR-P=1.00-K-10-140		1
		05011334	BAN CARD	FWR-P=1.00-K-10-450		1
		05011345	WIRING W3			1
		05011356	BAN CARD	SFWR-S-P=0.5-K-40-260 GS-2/4		1
		05011367	BAN CARD	FWR-P=1.25-K-22-340		1
		05011378	BAN CARD	FWR-P=1.00-K-12-400		1
		05011389	BAN CARD	FWR-P=1.00-K-30-750		1
		05015767	WIRING	W4		1

TRANSFORMER

		02563501	PULSE TRANS	PT-10 (2280-T008)	T1 on Main Board	1
	⚠	04907367	EL-INVERTOR TRANS DHE2105B		MOD1 on Inverter Board	1

AC INLET, OUTLET

	⚠	00125023	AC INLET	PWI1818 (INL-7) 10A/250V 3P	JK1 on Inlet Board	1

PICK UP, SENSOR

		03128767	PRESSURE SENSOR SHEET			1

SCREWS

		40010345	SCREW M4X10	BINDING MACHINE FE BZC		1
		40010734	SCREW 3X12	BINDING HEAD TAPPING A FE ZC		27
		40010745	SCREW 3X16	BINDING HEAD TAPPING A1 FEZC		4
		40011067	SCREW 3X8	BINDING TAPTITE B FE ZC		57
		40011101	SCREW 3X8	BINDING TAPTITE B BZC		5
		40011123	SCREW 4X8	BINDING TAPTITE B BZC		6
		40011312	SCREW 3X8	BINDING TAPTITE P BZC		28
		40011501	SCREW M3X8	PAN MACHINE W/SW BZC		4
		40011712	NUT M4X11.5	WOOD ANCHOR B ZC		8
		40011745	HEX NUT M4	SPRING NUT FE ZC		1
		40012145	SCREW 4X14	TRUSS TAPPING A BZC		2
		40013023	SCREW M4X25	PAN MACHINE W/SW+PW FE BZC		14
		40126267	SCREW M4X16	PAN MACHINE W/SW+PW BZC		6
		40128512	SCREW 4X25X20	PAN WASHER HEAD TAPTITE B BZC		18
		40237101	SCREW M3X8	PAN MACHINE W/ SW+SMALL PW BZC		11
		40238501	SCREW 4X8	BINDING TAPTITE P BZC		2
		40346201	SCREW 4X20	TRUSS TAPPING TWIN BZC		15
		40346289	SCREW 4X12	OVAL HEAD TAPTITE B NI		12
#		5100000383	SCREW 3X8	BINDING TAPTITE B W/NW FE BZC		8

PACKING

#		04903889	PACKING CASE			1
#		04903912	PACKING PAD			1
#		73907034	POLYSTYRENE PAD SET			1

MISCELLANEOUS

		03786845	IC SOCKET	71251-0012	CN5 on Main Board	1
#	⚠	04903956	INSULATING SHEET BOTTOM			1
#		05019756	INSULATING SHEET PAD			1
#	⚠	04903967	INSULATING SHEET MAIN			1
#	⚠	04903978	INSULATING SHEET PANEL			1
#		04904034	STAY			2
		12169368	LED SPACER	LDS-40B		2
		12169391	LED SPACER	LH-5S-10		1
		12199584	GROUNDING TERMINAL	M1698	TER1 on Inlet Board, TER1, TER2, TER3, TER4 on Jack Board	5
		12359105	RUBBER FOOT W	RS-09 235-105		4
		22265286	KEY FELT	226-286		1
		40016589	NYLON RIVET	NRP-335		2
		40231845	STRAIGHT PIN 6X20	FOR WOOD		2
		17041858	GREASE FOR KEY	MOLYKOTE G-1039 (100CC)		-
		17049543	GREASE FOR KEY	FLOIL G-336A WHITE 100C		-
	⚠	40679434	LABEL	CAUTION LABEL		1
	⚠	40679445	LABEL	XLR LABEL		1
	⚠	40784501	LABEL	STAND CAUTION LABEL		1
		01455523	CORD BUSHING	EDS-1717U		1
#		05012101	CLAMP	RFC-21V0		3
		40017378	COATING CLIP	CS-7		1
		40120967	COATING CLIP	CS-3		6

ACCESSORIES (Standard)

⚠	03340956	AC CORD SET PSE	100V YA-101/YP-3NB/YC-13	for 100V	1
⚠	00894378	AC CORD SET	120V SP301+IS14 SJT18/3	for 117V U/CS	2
⚠	00894389	AC CORD SET	230V SP22+IS14 H05VV-F3G1.0	for 230V EU	2
⚠	00907001	AC CORD SET	240VE SP-60+IS-14	for 240V E	1
⚠	23495124	AC CORD SET	240VA SC-144-JO1 ES303-10HMA	for 240V A	1
⚠	03450323	AC CORD SET	220V YP-36 YC-13D	for 220V CN	1
⚠	04561701	AC CORD KR-KS2S-20B	230V (FOR KOREAN MARKET)	for 230V K	1
	40232345	WARRANTY CARD	SYUCCHO JAPAN ONLY		1
#	73895067	OWNER'S MANUAL	JAPANESE		1
		* *This unit includes the following parts.*			
#	********	MANUAL TUTORIAL	JAPANESE		1
#	********	MANUAL REFERENCE	JAPANESE		1
#	********	MANUAL SOUND LIST	JAPANESE		1
#	********	LEAFLET INSTALL	JAPANESE		1
#	73897189	OWNER'S MANUAL	ENGLISH		1
		* *This unit includes the following parts.*			
#	********	MANUAL TUTORIAL	ENGLISH		1
#	********	MANUAL REFERENCE	ENGLISH		1
#	********	MANUAL SOUND LIST	ENGLISH		1
#	********	LEAFLET INSTALL	ENGLISH		1

Specifying The Main Board's Unit Model Setting

Specifying the unit model where the Main Board is installed allows the same Main Board to be used in all the Fantom-G6, G7, G8 models. The unit model setting is specified at the Test Mode's **25. KEYBOARD** (p. 56).

Verifying the Version Number

All the screen examples shown below are from the Fantom-G6. For G7 and G8 models, simply substitute **G7** or **G8** for the **G6** indications.

1. Turn the unit power on.
2. Press [MENU].
   The **MENU** window opens.
3. Press [F2 System] to display the **System Setup** screen.

4. Press [F4 Info].
5. Press [F1 Group/Up] and [F2 Group/Down] to select **Version info**.
   The Version Info screen then displays, and the version number is indicated in the LCD.

Saving and Loading Data

Required items

- USB memory (M-UF1G)

Formatting the USB Memory

The procedure for formatting (initializing) the USB Memory (inserted into the rear-panel's USB MEMORY slot) is given below.
Fantom-G units do not recognize a USB memory which has a format other than "FAT" (that USB memory cannot be formatted at the Fantom-G unit). If the USB memory has a format other than "FAT," use a personal computer to specify the "FAT" or "FAT32" file system format for the USB memory (for MAC OS X, specify the MS-DOS file system (FAT32)).

1. Connect the USB memory to the unit.
2. Press [MENU].
   The **MENU** window opens.
3. Press [▶] or [◀] to select **Format USB Memory**, then press [F8 Select].
   A confirmation message then displays.
4. Press [F7 (OK)] to execute USB memory formatting.
   * *To abort the formatting operation, press [F8 (Cancel)].*
   Formatting is completed when the **Format USB memory Completed!** message displays.
5. Press [F7 (OK)].

Backing up Patch or Wave Data (Project)

NOTE

Do not turn the unit power off during this procedure. Doing so could destroy the data.

Use the following procedure to back up the unit's internal memory data (project) to the USB memory.

1. Connect the USB memory to the unit.
2. Press [MENU].
   The **MENU** window opens.
3. Press [▶] or [◀] to select **Project**, then press [F8 Select].
   The **Project Menu** opens.
4. Press [▶] or [◀] to select **Backup Project**, then press [F8 Select].
   A confirmation message then displays.
5. Press [F7 OK] to execute the backup operation.
   * *To abort the formatting operation, press [F8 (EXIT)].*
   Backup is completed when the **Backup Project Completed!** message displays.
6. Press [F7 (OK)].
   * *An error message may display if the data cannot be saved properly due to insufficient USB memory capacity, etc.*

Loading Backup Data Back To The Unit

NOTE

Do not turn the unit power off during this procedure. Doing so could destroy the data.

Use the following procedure to load USB memory backup data (project) back to the unit's internal memory.

* *The internal memory content is overwritten when the backup data (project) is restored.*

1. Connect the USB memory which contains the backup data (project) to the unit.
2. Press [MENU].
   The **MENU** window opens.
3. Press [▶] or [◀] to select **Project**, then press [F8 Select].
   The Project Menu opens.
4. Press [▶] or [◀] to select **Backup Project**, then press [F8 Select].
   A confirmation message then displays.
5. Press [F7 OK] to execute the loading operation.

* *To abort the loading operation, press [F8 (EXIT)].*

Restore is completed when the **Restore Project Completed!** message displays.

6. Press [F7 (OK)].

Factory Reset Procedure

A "factory reset" returns all settings to their factory-setting status (status which existed when the product was shipped).

MEMO

When an ARX Series expansion board is installed in the Fantom-G6/G7/G8, the Fantom-G Main Board data is overwritten by the ARX setting data. Although this ARX setting data is cleared if a Test Mode **29. FACTORY RESET** (p. 58) is performed, the ARX setting data is not cleared by the Factory Reset procedure described below. This Factory Reset differs from the Test Mode's **FACTORY RESET** only in this respect. For more information, refer to **Loading ARX Series Setting Data** (p. 58).

NOTE

The Factory Reset procedure described below clears all user data from the unit's internal memory. Important user data should therefore be backed up (see **Saving and Loading Data** (p. 47)) before performing this Factory Reset.

1. Turn the unit's power on.
2. Press [MENU].
   The **MENU** window opens.
3. Press [▶] or [◀] to select **Factory Reset**, then press [F8 Select].
   A confirmation message then displays.
4. Press [F7 (OK)] to execute the Factory Reset.

* *To abort the Factory Reset operation, press [F8 (EXIT)].*

NOTE

The Factory Reset operation takes several minutes to complete. Do not turn the power off until the Factory Reset is completed.

The Factory Reset procedure is completed when the **Factory Reset Completed!** message displays.

5. Press [F7 (OK)].

System Update Procedure

Required items:

- Windows PC
- USB memory (M-UF1G)
- Update file (obtained from service-net)

Update Procedure

NOTE

Do not turn the unit power off during this procedure. Doing so could destroy the data.

1. Copy the Update file (fan_g_upa.bin) from the PC to the USB memory's root directory.
2. Using the prescribed Windows procedure, cancel (stop) the USB memory connection, then disconnect the USB memory from the PC.
3. Connect the USB memory to the unit, then turn the unit's power on.
   The update operation automatically begins, and a blue screen displays in the LCD.
   The update is completed when **Completed!** displays.
4. Turn the unit's power off.
5. Disconnect the USB memory from the unit, then turn the unit's power on and verify that the latest version is running.

* *Turning the unit's power on again without disconnecting the USB memory will result in another update operation.*

* *If the same USB memory used to perform the update is also to be used in other unit operations, the USB memory must be formatted for Fantom-G6/G7/G8. For this procedure, refer to* ***Formatting the USB Memory*** *(p. 47).*

When Updating Fails

- Turn the power off then on again to execute another update.
- If updating still fails, the Update file may not be copied correctly to the USB memory. Copy the file again, then perform the update.
- If updating still fails, replace the Main Board.

Test Mode

All the screen examples shown below are from the Fantom-G6. For G7 and G8 models, simply substitute **G7** or **G8** for the **G6** indications.

Test Items

1. VERSION CHECK (p1. VERSION CHECK (p. 50)
2. DEVICE (p. 50)
3. PEDAL (p. 50)
4. PHONES (p. 51)
5. OUTPUT A (p. 51)
6. OUTPUT B (p. 51)
7. COAXIAL (p. 51)
8. EXPANSION BOARD (p. 52)
9. LINE IN (p. 52)
10. MIC IN (p. 52)
11. HI-Z IN (p. 52)
12. PHANTOM VOLTAGE (p. 53)
13. MUTE (p. 53)
14. LCD (p. 53)
15. ENCODER (p. 54)
16. SW1/LED1 (p. 54)
17. LED2 (p. 54)
18. SW2 (p. 55)
19. A/D (p. 55)
20. D BEAM ADJUST (p. 55)
21. D BEAM CHECK (p. 55)
22. PAD ADJUST (p. 56)
23. PAD VELOCITY (p. 56)
24. PAD AFTERTOUCH (p. 56)
25. KEYBOARD (p. 56)
26. LINE NOISE (p. 57)
27. MIC NOISE (p. 58)
28. D/A NOISE (p. 58)
29. FACTORY RESET (p. 58)
30. COMPLETED (p. 59)

Required Items

- USB Memory (M-UF1G)
- USB Mouse
- Windows PC (XP or Vista)
- 512MB DIMM (refer to **Specifications** (p. 4) for DIMM specification.)
- Expansion Board: ARX Series x 2 (same title is available)
- Expression Pedal
- MIDI Cable
- USB Cable
- Audio Cable
- Coaxial Cable
- Oscillator (for audio signal input)
- Oscilloscope or Speaker (for output audio check)
- Jig which presses at 3 kgf (push-pull gauge, etc.) or a 3 kg weight
- Tester
- 1/4-inch phone type short plug x 2
- XLR type short plug x 1
- Noise Meter

Test Preparations

* *Before beginning the test preparations, verify that the unit's power is off.*

1. Remove the EXP COVER at the unit's bottom face, then install the DIMM and Expansion Boards.
2. Use the USB cable to connect the **USB COMPUTER** connector to the Windows PC.
3. Connect the USB memory to the **USB MEMORY** connector.
4. Connect the USB mouse to the **USB MOUSE** connector.
5. Use the coaxial cable to connect **COAXIAL IN** to **COAXIAL OUT**.
6. Use the MIDI cable to connect **MIDI IN** to **MIDI OUT**.
7. Connect the expression pedal to **FOOT PEDAL HOLD**.
8. Connect the oscillator to **LINE IN L/R** to enable audio signal inputs.
9. Connect the oscilloscope or also to **PHONES** to enable output signal measurement.

Establishing the Test Mode

1. Turn the unit's power on while holding down the [TEMPO] and [EFFECTS (ROUTING)] buttons.
2. When **Test Mode Setup Service** displays, release the [TEMPO] and [EFFECTS (ROUTING)] buttons.
   The Test Mode (**1. VERSION CHECK**) begins when the progress bar reaches 100%.

Exiting the Test Mode

Turn the unit's power off.

Skipping Test Items

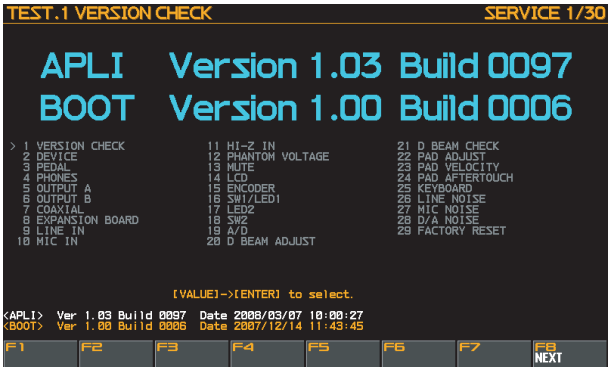
[SHIFT] + [▶]: Forced move to next test item.
[SHIFT] + [◀]: Forced move to previous test item.
[SHIFT] + [EXIT]: Forced return to "**1. VERSION CHECK**."

* *Screen changing occurs one or two seconds after the above button operations are executed. Do not press the buttons again during this interval.*

Test Items

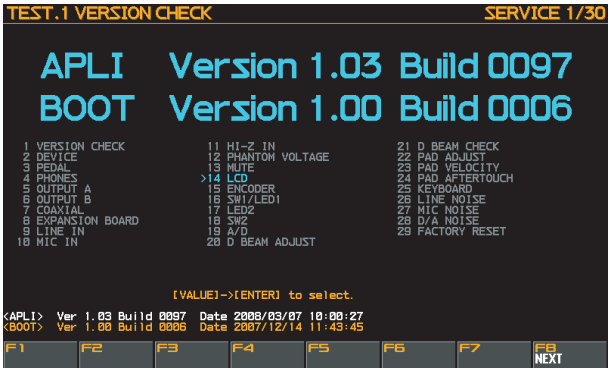
1. VERSION CHECK

Checks the version of the main program.



Press the [▶] button to proceed to the next test item.

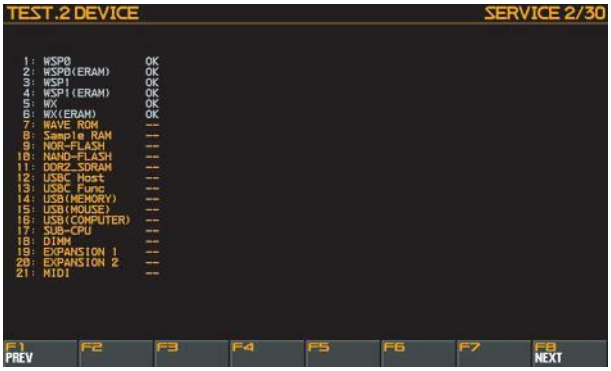
* *At the screen shown below, the VALUE knob can be turned to select a test item. The [ENTER] key can then be pressed to jump directly to that item.*



Press [SHIFT] + [EXIT] to return to the above screen from any test item screen.

2. DEVICE

Automatically tests all devices (total of 21 tests).



If all test results are **OK**, testing automatically proceeds to the next test item.

NG displays if a fault is found, and the fault location is indicated. (In this case, testing does not automatically proceed to the next text item.)

LCD Indications and Corrective Actions

LCD Indication	Corrective Action
1: WSP0	Check to see if IC69 (on Main Board) is correctly installed.
2: WSP0 (ERAM)	Check to see if IC91 (on Main Board) is correctly installed.
3: WSP1	Check to see if IC70 (on Main Board) is correctly installed.
4: WSP2 (ERAM)	Check to see if IC72 (on Main Board) is correctly installed.
5: WX	Check to see if IC55 (on Main Board) is correctly installed.
6: WX (ERAM)	Check to see if IC63 (on Main Board) is correctly installed.
7: WAVE ROM	Check to see if IC53 and 56 (on Main Board) are correctly installed.
8: Sample RAM	Check to see if IC54 and 57 (on Main Board) are correctly installed.
9: NOR-FLASH	Check to see if IC6 (on Main Board) is correctly installed.
10: NAND-FLASH	Check to see if IC11 (on Main Board) is correctly installed.
11: DDR2_SDRAM	Check to see if IC45 and 46 (on Main Board) are correctly installed.
12: USBC Host	Check to see if IC14 (on Main Board) is correctly installed.
13: USBC Func	Check to see if IC7 (on Main Board) is correctly installed.
14: USB (MEMORY)	Check to see if the USB memory is connected to the USB MEMORY connector.
15: USB (MOUSE)	Check to see if the USB mouse is connected to the USB MOUSE connector.
16: USB (COMPUTER)	Check to see if the USB COMPUTER connector is connected to the Windows PC by a USB cable.
17: SUB-CPU	Check to see if IC12 (on SUB CPU Board) is correctly installed.
18: DIMM	Check to see if DIMM is correctly installed.
19: EXPANSION 1	Check to see if IC2, 4, 29, 31 and 33 (on Expansion Board 1) are correctly installed.
20: EXPANSION 2	Check to see if IC2, 4, 29, 31 and 33 (on Expansion Board 2) are correctly installed.
21: MIDI	Check to see if MIDI IN and MIDI OUT are connected by the MIDI cable.

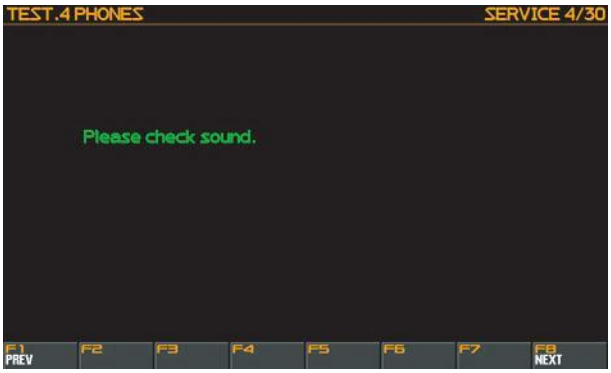
3. PEDAL

Tests the expression pedal operation.

1. With the expression pedal connected to **FOOT PEDAL HOLD**, press the pedal, then release it.
   An **OK** result is indicated if **0** to **127** are detected correctly.
2. With the expression pedal connected to **FOOT PEDAL CTRL-1**, press the pedal, then release it.
   An **OK** result is indicated if **0** to **127** are detected correctly.
3. With the expression pedal connected to **FOOT PEDAL CTRL-2**, press the pedal, then release it.
   An **OK** result is indicated if **0** to **127** are detected correctly.
   If all test results are **OK**, testing automatically proceeds to the next test item.

4. PHONES

Tests the audio signal (L/R) output from the **PHONES** jack.

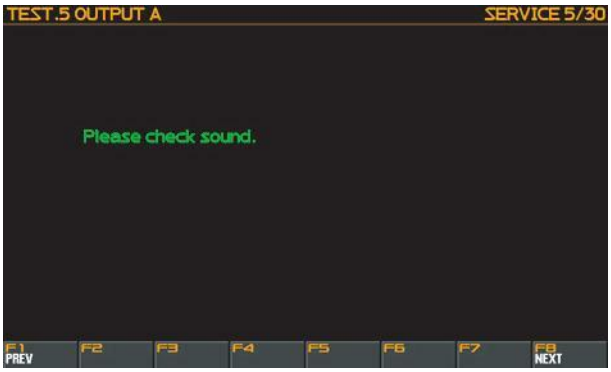


1. Connect an oscilloscope to the **PHONES** jack in order to display the waveform.
2. Gradually turn the **VOLUME** knob (at Top Panel's left end) to its maximum value.
3. Verify that the following signal outputs occur.
   L: 500 Hz, sine wave
   R: 1000 Hz, sine wave
   Level: 5.2 Vpp (error: +/-10%)
4. Press [▶] to proceed to the next test item.

5. OUTPUT A

Tests the audio signal (L/R) output from the **OUTPUT A** jack.

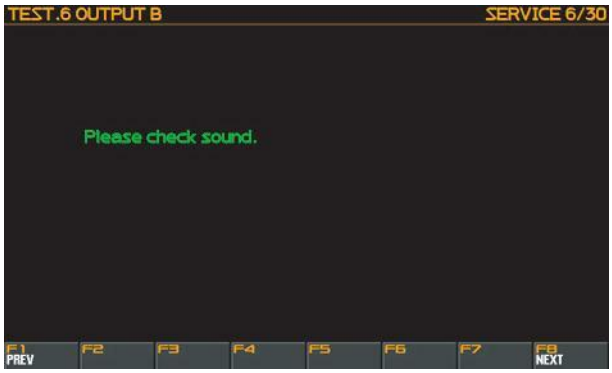
* *In subsequent tests, the audio signal which is output from the **OUTUPT A L/R** jack is also output from the **PHONES** jack (sound is audible with headphones).*



1. Connect an oscilloscope to the **OUTPUT A L/R** jack in order to display the waveform.
2. Verify that the following signal outputs occur.
   L: 600 Hz, sine wave
   R: 1200 Hz, sine wave
   Level: 5.2 Vpp (error: +/-10%, **VOLUME** knob: max.)
3. Press [▶] to proceed to the next test item.

6. OUTPUT B

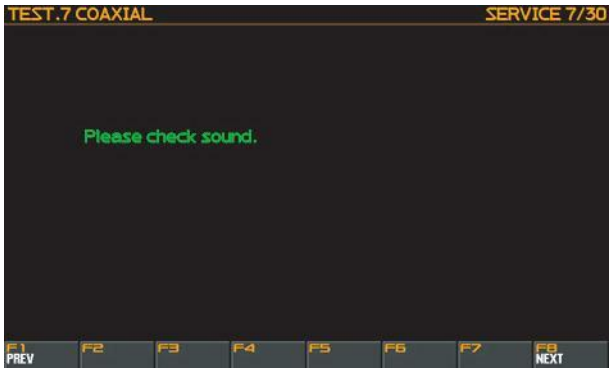
Tests the audio signal (L/R) output from the **OUTPUT B** jack.



1. Connect an oscilloscope to the **OUTPUT B L/R** jack in order to display the waveform.
2. Verify that the following signal outputs occur.
   L: 700 Hz, sine wave
   R: 1400 Hz, sine wave
   Level: 5.2 Vpp (error: +/-10%)
3. Press [▶] to proceed to the next test item.

7. COAXIAL

Tests the audio signal (L/R) input/output to/from the **COAXIAL IN/OUT** jack.

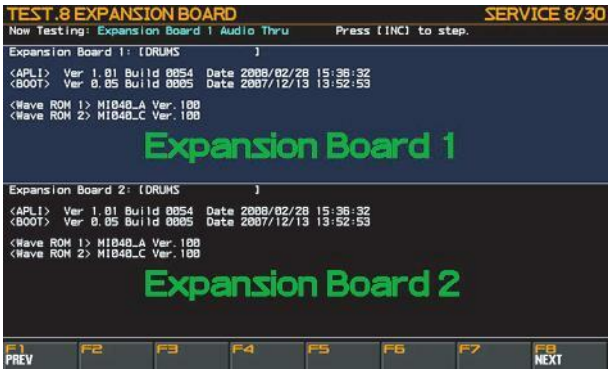


The audio signal which passes through the **COAXIAL IN/OUT** circuit is output to the **OUTPUT A** jack.

1. Connect an oscilloscope to the **OUTPUT A L/R** jack in order to display the waveform.
2. Verify that the following signal outputs occur.
   L: 440 Hz, sine wave
   R: 880 Hz, sine wave
   Level: 5.2 Vpp (error: +/-10%, **VOLUME** knob: max.)
3. Press [▶] to proceed to the next test item.

8. EXPANSION BOARD

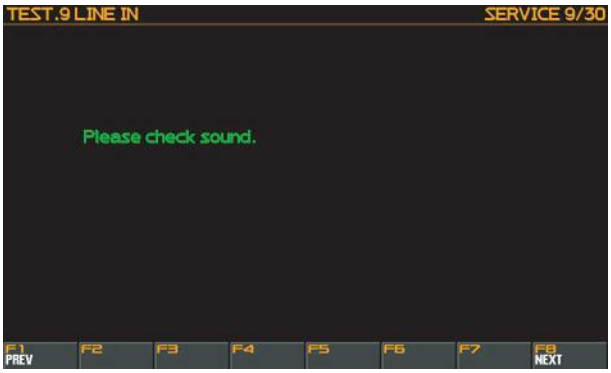
Verifies that the expansion boards are operating correctly.



1. Verify the versions of the **Expansion Board 1**, **2** programs.
   Then test the Expansion Board 1 audio signal (L/R).
   The expansion board's audio signal is output to the **OUTPUT A** jack.
2. Connect an oscilloscope to the **OUTPUT A L/R** jack in order to display the waveform.
3. Verify that the following signal outputs occur.
   L: 350 Hz, sine wave
   R: 700 Hz, sine wave
   Level: 5.2 Vpp (error: +/-10%, **VOLUME** knob: max.)
   Next, test the Expansion Board 2 audio signal (L/R).
4. Press [INC].
5. Verify that the following signal outputs occur.
   L: 550 Hz, sine wave
   R: 1100 Hz, sine wave
   Level: 5.2 Vpp (error: +/-10%, **VOLUME** knob: max.)
6. Press [▶] to proceed to the next test item.

9. LINE IN

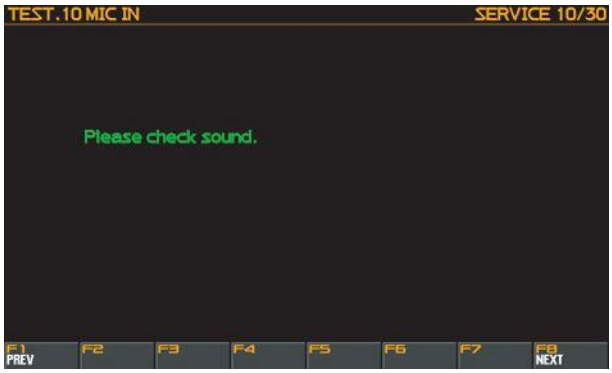
Tests the audio signal (L/R) input from the **LINE IN** jack.



1. Verify that an oscillator is connected to the **LINE IN L/R** jack.
2. Input a **2.2 Vpp sine wave** to the **LINE IN L/R** jack.
3. Turn the **LINE IN LEVEL** knob all the way to the right (MAX).
4. Verify that a **5.2 Vpp** (error: +/-10%) output occurs from the **OUTPUT A L/R** jack. (**VOLUME** knob: max.)
5. Press [▶] to proceed to the next test item.

10. MIC IN

Tests the audio signal (L/R) input from the **MIC/GUITAR IN** jack.



1. Set **MIC/GUITAR SW** to **PHANTOM OFF**.
2. Connect an oscillator to the **MIC/GUITAR IN** jack.
3. Input a **90 mVpp sine wave** to the **MIC/GUITAR IN** jack.
4. Turn the **MIC/GUITAR INPUT LEVEL** knob all the way to the right (MAX).
5. Verify that a **4.2 Vpp** (error: +/-10%) output occurs from the **OUTPUT A L/R** jack. (**VOLUME** knob: max.)
6. Press [▶] to proceed to the next test item.

11. HI-Z IN

Tests the audio signal (L/R) input from the **MIC/GUITAR IN** jack.

1. Set **MIC/GUITAR SW** to **Hi-Z**.
2. Using an oscillator, input a **900 mVpp sine wave** to the **MIC/GUITAR IN** jack.
3. Turn the **MIC/GUITAR INPUT LEVEL** knob all the way to the right (Max).
4. Verify that a **4.2 Vpp** (error: +/-10%) output occurs from the **OUTPUT A L/R** jack. (**VOLUME** knob: max.)
5. Press [▶] to proceed to the next test item.

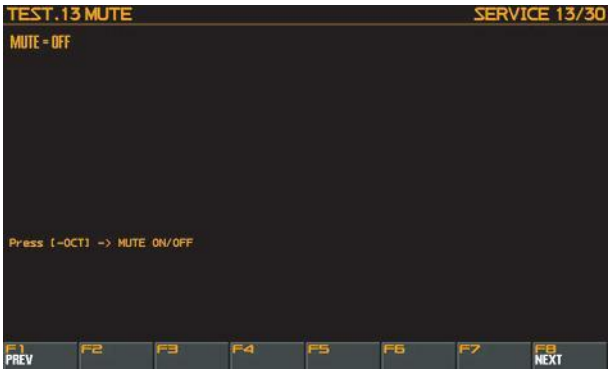
12. PHANTOM VOLTAGE

Tests the PHANTOM power supply operation.

1. Set **MIC/GUITAR SW** to **PHANTOM ON**.
2. Verify that there is a **48 V DC** potential difference between pins 1-2 and pins 1-3 of the **MIC/GUITAR** jack.
3. Press [▶] to proceed to the next test item.

13. MUTE

Tests the MUTE circuit operation.



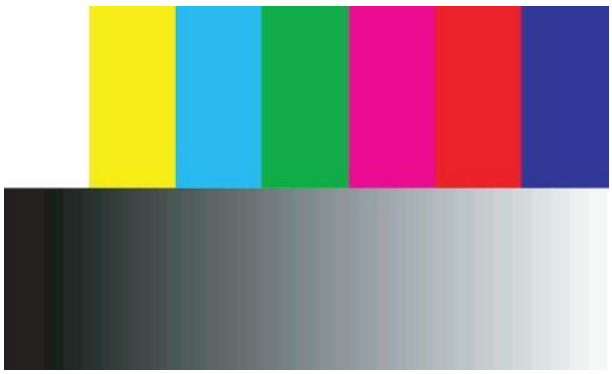
An oscillation tone output occurs from the **OUTPUT A** jack, and [-OCT] LED blinks.

1. Verify that the audio output from the **OUTPUT A** jack is muted while [-OCT] is pressed.
2. Verify that the mute condition is canceled when [-OCT] is released, and that the oscillation tone is output from the **OUTPUT A** jack.
3. Press [▶] to proceed to the next test item.

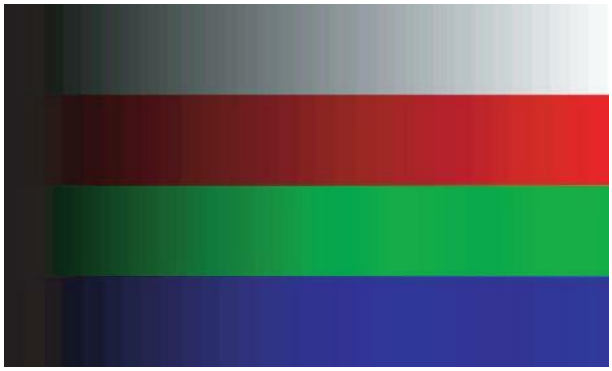
14. LCD

Tests the LCD display operation.

1. Press [+OCT] or [INC].
2. Check for missing dots, color mottling, defects, or foreign matter on the displayed screen.
3. Press [+OCT] or [INC] to proceed to the next pattern, and perform the same checks.



7-color bar and gray scale

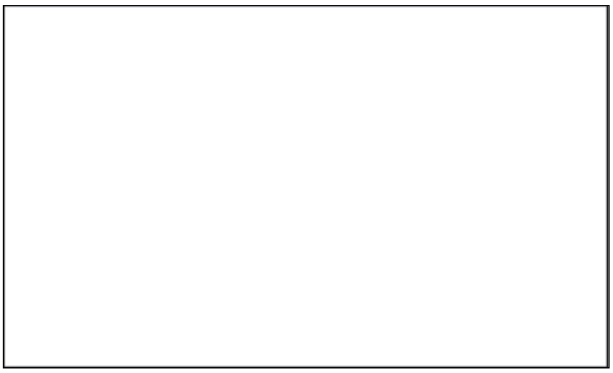


Gray scale and red, green, blue

All red

All green

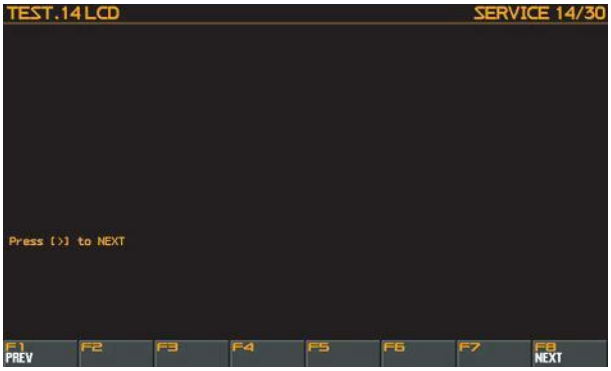
All blue



All white

All black

After all patterns have been checked, the following screen displays.



4. Press [▶] to proceed to the next test item.

15. ENCODER

Tests the encoder operation.

1. Turn the VALUE knob two turns in the counterclockwise direction and verify that **0** is indicated.

2. When the VALUE knob is then turned two turns in the clockwise direction, the indicated value becomes **48**, and testing automatically proceeds to the next test item.

16. SW1/LED1

Tests the switch with LED operation.

Verify that the button indicated by the red arrow in the LCD is lit at the unit's panel, then press that button.

* *Testing begins from [S1] above the pitch bender.*

* *The [PLAY] button has a two-color LED (red and green). Press the [PLAY] button two times to verify that both colors light.*

Testing automatically proceeds to the next test item when [33: HOLD] is pressed.

17. LED2

Tests the LED lighting operation.

The 7-segment LEDs are set blinking one after the other. The **PEAK** LED also blinks at this time.

If no problems are found, press [▶] to proceed to the next test item.

18. SW2

Tests operation switches which have no LEDs.

1. Press each switch in the order that they are indicated by the red arrow in the LCD.
2. Testing proceeds to the next test item when [27: INC] is pressed.

19. A/D

Tests the pitch bender, aftertouch, and controller knob and slider operation.

1. Verify that **0** is indicated when the pitch bender is tilted to its left-side position, that **127** is indicated when tilted to its right-side position, and that **64** is indicated when returned to its original position.
   If no problems are detected, **OK** displays.
2. Verify that **127** is indicated when the pitch bender is tilted all the way to the back.
   If no problem is detected, **OK** displays.

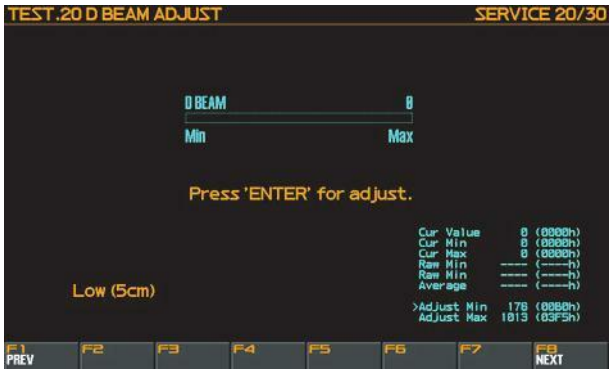
   Next, perform the aftertouch check.
3. Verify that **127** is indicated when any given keyboard key is fully pressed.
   If no problem is detected, **OK** displays.

   Next, perform the control knob check.
4. Turn the knob indicated in the LCD all the way to the left and verify that **0** is indicated.
5. In the same manner, turn the knob all the way to the right and verify that **127** is indicated.
   If no problem is detected, **OK** displays.
6. Check the other control knobs in the same manner.

   Next, perform the slider check.
7. Move the slider indicated in the LCD to its bottom end and verify that **0** is indicated.
8. In the same manner, move the slider to its top end and verify that **127** is indicated.
   If no problem is detected, **OK** displays.
9. Check the other sliders in the same manner.
   If **OK** is indicated for all sliders, testing automatically proceeds to the next test item.

20. D BEAM ADJUST

Adjusts the D BEAM controller.



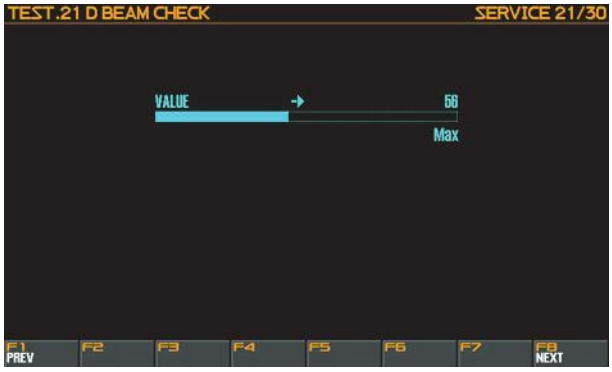
Set the sensitivity for the position at 5 cm above the D BEAM controller.

1. When **Low (5cm)** displays in the LCD, place a hand 5 cm above the D BEAM controller and press [ENTER].

   Next, set the sensitivity for the position at 45 cm above the D BEAM controller.
2. When **Hi (45cm)** displays in the LCD, place a hand 45 cm above the D BEAM controller and press [ENTER].
   When the adjustment is completed, testing automatically proceeds to the next test item.

21. D BEAM CHECK

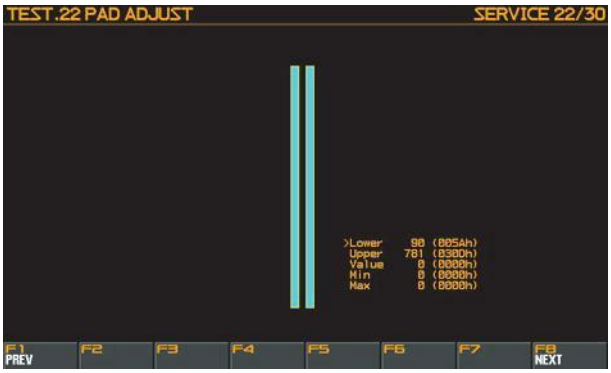
Tests the D BEAM controller operation.



1. Place a hand over the D BEAM controller, stopping the hand at the position where the **VALUE** is **0**.
2. Move the hand downward to the position at 5 cm above the panel face and verify that the **VALUE** becomes **127**.
3. Next, move the hand upward to the position at 45 cm above the panel face and verify that the **VALUE** becomes **0**.
   If no problems are detected, testing automatically proceeds to the next test item.

22. PAD ADJUST

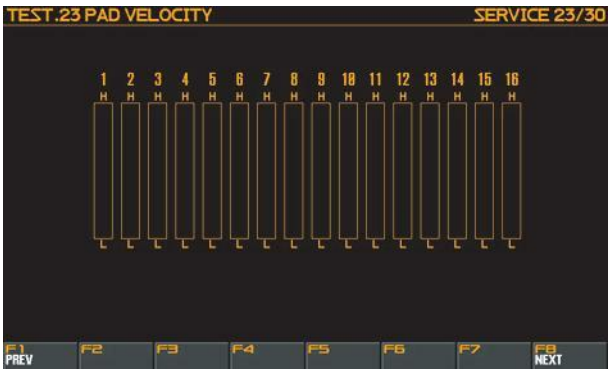
Adjusts the DYNAMIC PAD sensitivity.



1. Use a push-pull gauge or also to press [DYNAMIC PAD 1] with a force of **3 kgf**.
2. Press [ENTER].
   The setting is saved, and testing automatically proceeds to the next test item.

23. PAD VELOCITY

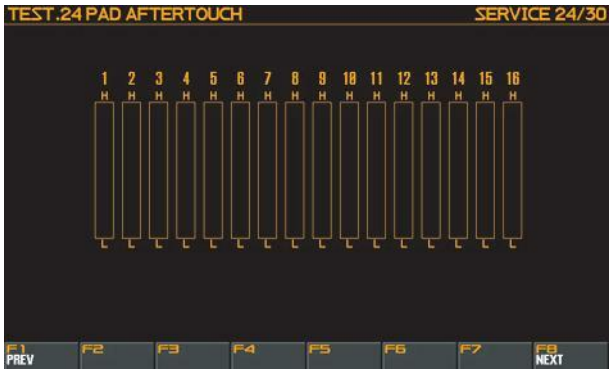
Tests the DYNAMIC PAD velocity.



1. Press the dynamic pads with a weak force in sequence from [DYNAMIC PAD 1] to [DYNAMIC PAD 16].
2. Verify that the pressed dynamic pad's LED changes from "blinking" to a "constant on" status, and that the LCD's **L** display for the indicated dynamic pad is dimmed.
3. Repeat the above procedure in the same [DYNAMIC PAD 1] to [DYNAMIC PAD 16] sequence, but press the pads this time with a strong force.
4. Verify that the pressed dynamic pad's LED changes from a "constant on" to an "off" status, and that the LCD's **H** display and bar-graph for the indicated dynamic pad are dimmed.
   If all the dynamic pad LEDs go off, and all bar-graphs dim in the LCD, testing automatically proceeds to the next test item.

24. PAD AFTERTOUCH

Tests the DYNAMIC PAD's aftertouch operation.



1. Gradually press the dynamic pads with a strong force in sequence from [DYNAMIC PAD 1] to [DYNAMIC PAD 16].
2. Verify that the pressed dynamic pad's LED changes from a "blinking" to an "off" status, and that the bar-graph for the indicated dynamic pad is dimmed in the LCD.
   If all the dynamic pad LEDs go OFF, and all bar-graphs dim in the LCD, testing automatically proceeds to the next test item.

25. KEYBOARD

First, the Main Board's unit model setting is specified. Because the hardware of the Main Board is the same for all the Fantom-G6, G7, G8 models, this setting allows the Main Board to recognize the model in which it is being used.

After specifying this setting, the keyboard sound and velocity are tested.

First the Main Board's unit model setting is specified.

1. While holding down [SHIFT], press the following buttons to specify the unit model setting.
   [PAD TRIGGER]: Fantom-G6
   [SOLO SYNTH]: Fantom-G7
   [ASSINGABLE]: Fantom G8
2. Verify that the unit model name indicated in the LCD is the same as that written on the unit's top panel logo.

3. Press the highest pitch key of the keyboard.
The following content displays in the LCD.

4. Press the lowest pitch key of the keyboard.
The following content displays in the LCD.

This completes the Main Board's unit model setting procedure.

Next, check the keyboard sound and velocity.
The keys produce the piano sound (damping sound) when pressed, and the key's note number and velocity display in the LCD.

5. Verify that the all keys produce sound. Also verify that the volume varies according to force with which the key is pressed.

NOTE

If no sound is produced when pressed the highest pitch key, the Main Board's unit model setting may be incorrect. In this case, return to step **1** and specify a correct unit model setting.

* *Testing does not proceed to the next test item (**26. LINE NOISE**) until it has been verified that all keys produce sound.*

6. Press [INC].

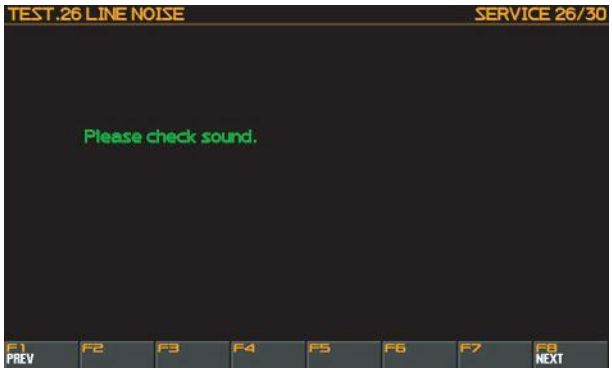
The keys produce the organ sound (sustained sound) when pressed, and the key's note number and velocity display in the LCD.

7. Verify that all keys produce a sound.

8. Press [▶] to proceed to the next test item.

26. LINE NOISE

Measures the residual noise at LINE inputs.



1. Disconnect all the connected cables, memory devices, and mouses.

2. Connect a 1/4-inch phone type short plug to the **LINE IN L/R** jack.

3. Set the noise meter's input filter to **DIN AUDIO**.

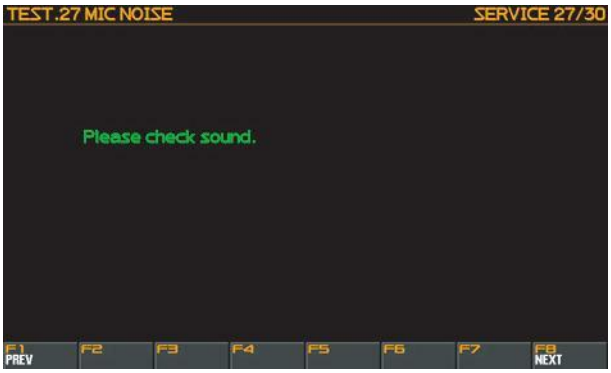
4. Turn **VOLUME** and **LINE INPUT LEVEL** to their maximum levels.

5. Connect the noise meter to **OUTPUT A L/R** and verify that both the **L** and **R** values are **-80 dB** or less.

6. Press [▶] to proceed to the next test item.

27. MIC NOISE

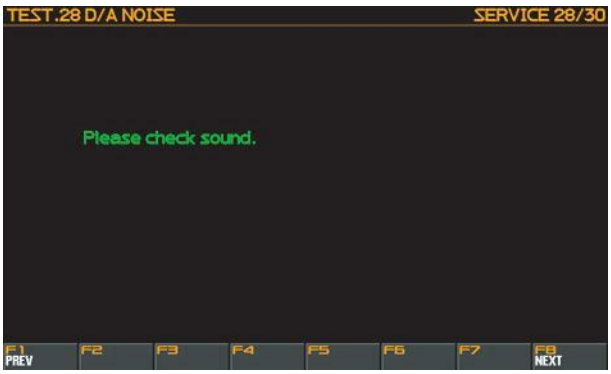
Measures the residual noise at MIC inputs.



1. Connect an XLR type short plug to the **MIC/GUITAR** jack.
2. Turn the **VOLUME** and **MIC/GUITAR INPUT LEVEL** to their maximum levels.
3. Connect the noise meter to **OUTPUT A L/R** and verify that both the **L** and **R** values are **-75 dB** or less.
4. Press [▶] to proceed to the next test item.

28. D/A NOISE

Measures the residual noise in a no-input condition.



1. Turn the **VOLUME** to its maximum level.
2. Connect the noise meter to **OUTPUT A L/R** and verify that both the **L** and **R** values are **-86 dB** or less.
3. Connect the noise meter to **OUTPUT B L/R** and verify that both the **L** and **R** values are **-86 dB** or less.
4. Press [▶] to proceed to the next test item.

29. FACTORY RESET

Performs a Factory Reset (restores factory settings).

Loading ARX Series Setting Data

After performing the Factory Reset in the Test Mode, the following message displays the next time power is turned on in the usual manner.

Install Menu
This process will require several minutes.
Never turn off the power until this process has been completed.

The above message prompts the user to load the setting data of the installed ARX expansion board.
If **[F8 Execute]** is pressed at this time, the setting data on the installed ARX is loaded to the Fantom-G's Main Board. In other words, this could result in the loading of setting data from an ARX which the user does not possess.
This setting data can be cleared by the Factory Reset in the Test Mode. Therefore, the setting data must either be loaded from the user's installed ARX at the next power on, or the user must load the data manually. Once loaded, the above message does not display at subsequent startups.
ARX setting data is not cleared by the Factory Reset performed by the **Factory Reset Procedure** (p. 48).

* *"**Factory Reset Procedure**" (p. 48) differs from the "**29. FACTORY RESET**" (p. 58) only in that the former procedure does not clear the ARX setting data.*

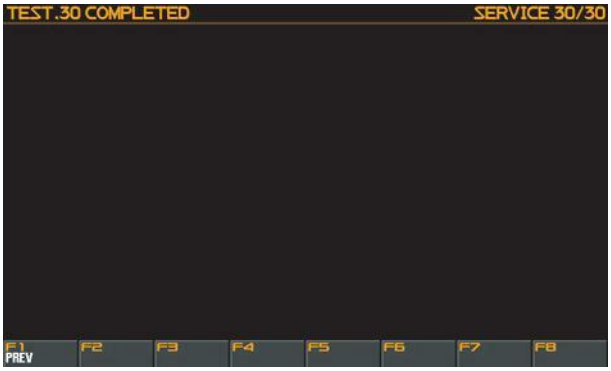
1. Verify again that the correct model name is displayed.
2. Press [ENTER].
   The LCD then displays the following content, and the Factory Reset is executed.

After the Factory Reset is completed, the following message displays in the LCD.

3. Press [▶] to proceed to the next test item.

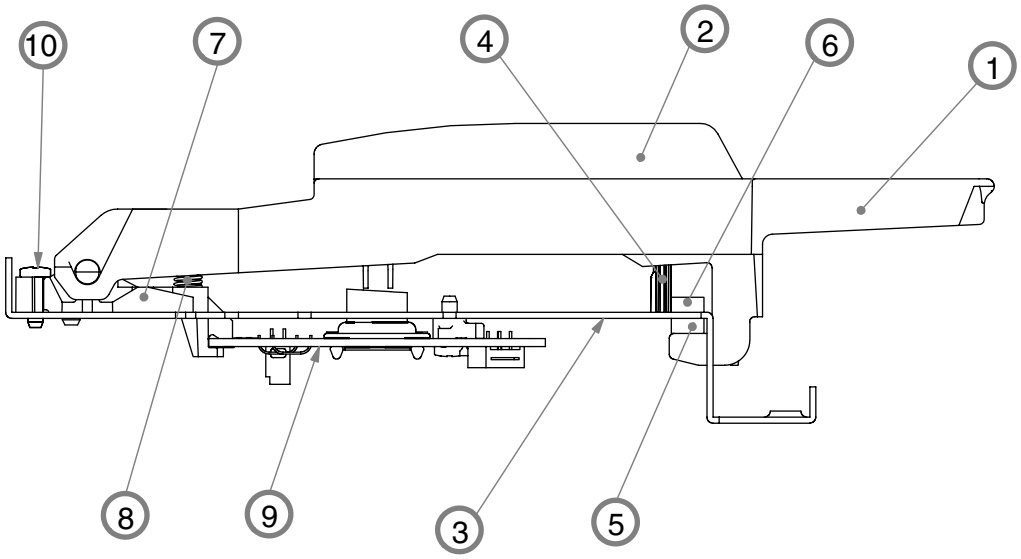
30. COMPLETED

This completes the Test Mode operations.



Turn the unit's power off at this time.

Keyboard Parts List (Fantom-G6: SK-1061-A)

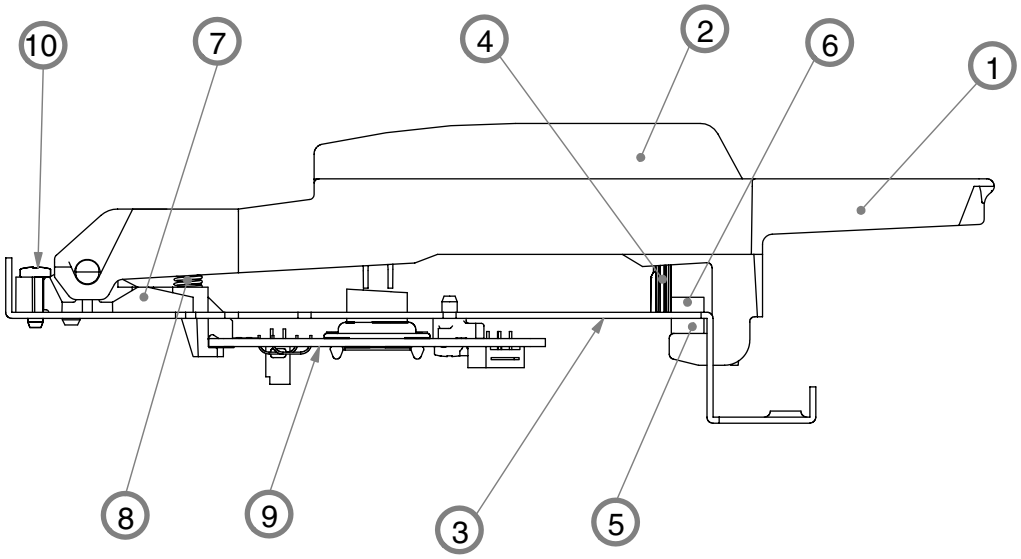


No.	Part Code	Part Name	Description	Q'ty
	73780967	KEYBOARD ASSY	SK-1061-A	
1	73671489	NATURAL KEY	SK-9 CF (W/WEIGHT)	10
	73671490	NATURAL KEY	SK-9 EB (W/WEIGHT)	10
	73671501	NATURAL KEY	SK-9 D (W/WEIGHT)	5
	73671512	NATURAL KEY	SK-9 G (W/WEIGHT)	5
	73671523	NATURAL KEY	SK-9 A (W/WEIGHT)	5
	73671534	NATURAL KEY	SK-9 C'F' (W/WEIGHT)	1
2	73671545	SHARP KEY	SK-9(W/WEIGHT)	25
3	********	CHASSIS 61P		1
4	04347078	GUIDEBUSHING-B		61
5	00893701	CUSHION	SK-9 61P	1
6	04013278	AFTERTOUCH-B(61P)	SK-961	1
7	04452190	SUB CHASSIS 12P		4
	04452212	SUB CHASSIS 13P		1
8	01231534	SPRING-WT2	SK-9	61
9	04567412	61P PWB SET		1
10	40012256	SCREW M3X10	BINDING B-TITE FE ZC	31

* *The contact circuit board (#04567412) is a set of an upper board and a lower board, and includes rubber switches.*

* *The cable which connects the contact circuit board (#04567412) to Main Board (#73895123) isn't included in this unit (#73780967).*

Keyboard Parts List (Fantom-G7: SK-1076-C)

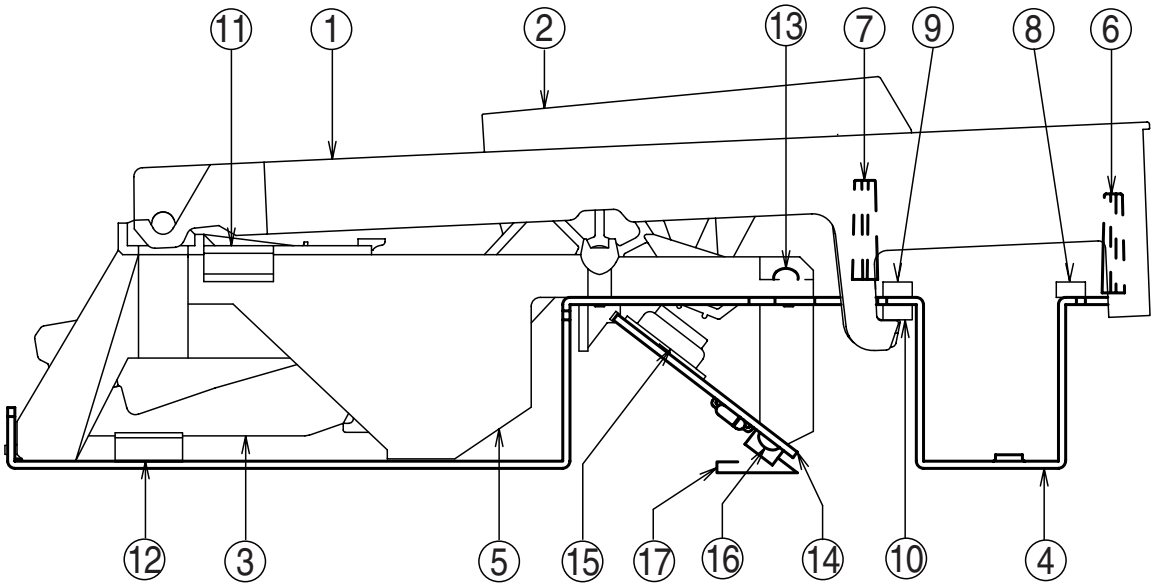


No.	Part Code	Part Name	Description	Q'ty
	5100001544	KEYBOARD ASSY	SK-1076-C	
1	73671489	NATURAL KEY	SK-9 CF (W/WEIGHT)	13
	73671490	NATURAL KEY	SK-9 EB (W/WEIGHT)	12
	73671501	NATURAL KEY	SK-9 D (W/WEIGHT)	6
	73671512	NATURAL KEY	SK-9 G (W/WEIGHT)	6
	73671523	NATURAL KEY	SK-9 A (W/WEIGHT)	6
	73896889	NATURAL KEY	SK-9 E' (W/WEIGHT)	1
	73781067	NATURAL KEY	SK-9 G' (W/WEIGHT)	1
2	73671545	SHARP KEY	SK-9 (W/WEIGHT)	31
3	********	SK-10 CHASIS 76P LONG		1
4	04347078	GUIDE BUSHING-B		76
5	00895212	SK-9 CUSHION 76P		1
6	04013290	AFTERTOUCH-B(76P)	SK-976	1
7	04452190	SUB CHASSIS 12P	SK-10	5
	04452223	SUB CHASSIS 8P HI	SK-10	1
	04452234	SUB CHASSIS 8P LOW	SK-10	1
8	01231534	SPRING-WT2	SK-9	76
9	04671889	76P PWB SET	HI-AFT	1
10	40012256	SCREW M3X10	BINDING B-TITE FE ZC	40

* *The contact circuit board (#04671889) is a set of an upper board and a lower board, and includes rubber switches.*

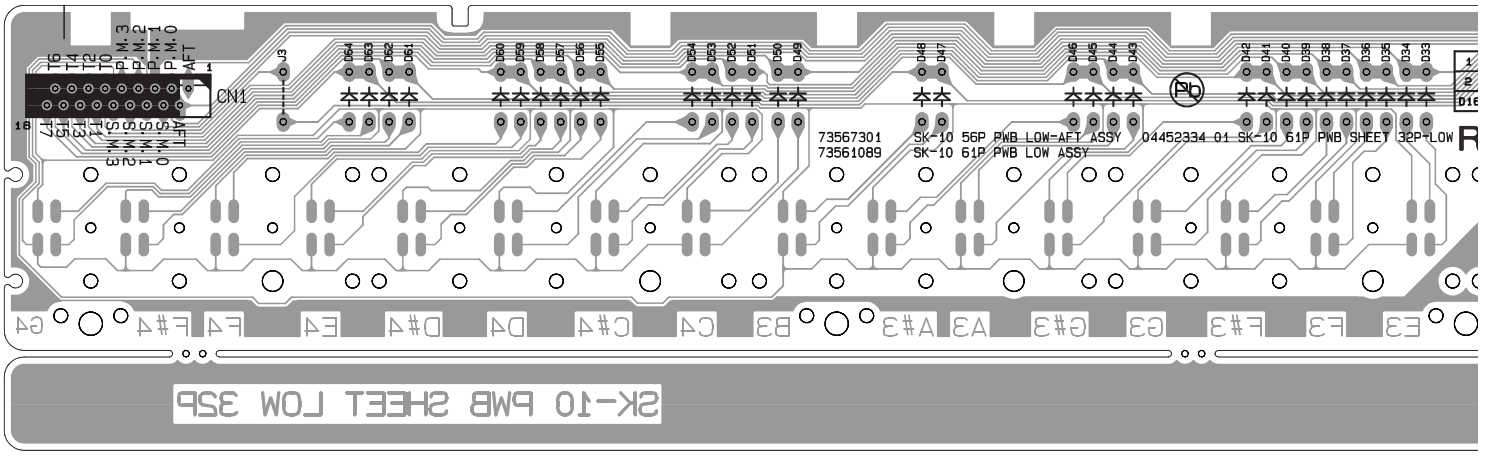
* *The cable which connects the contact circuit board (#04671889) to Main Board (#73895123) isn't included in this unit (#5100001544).*

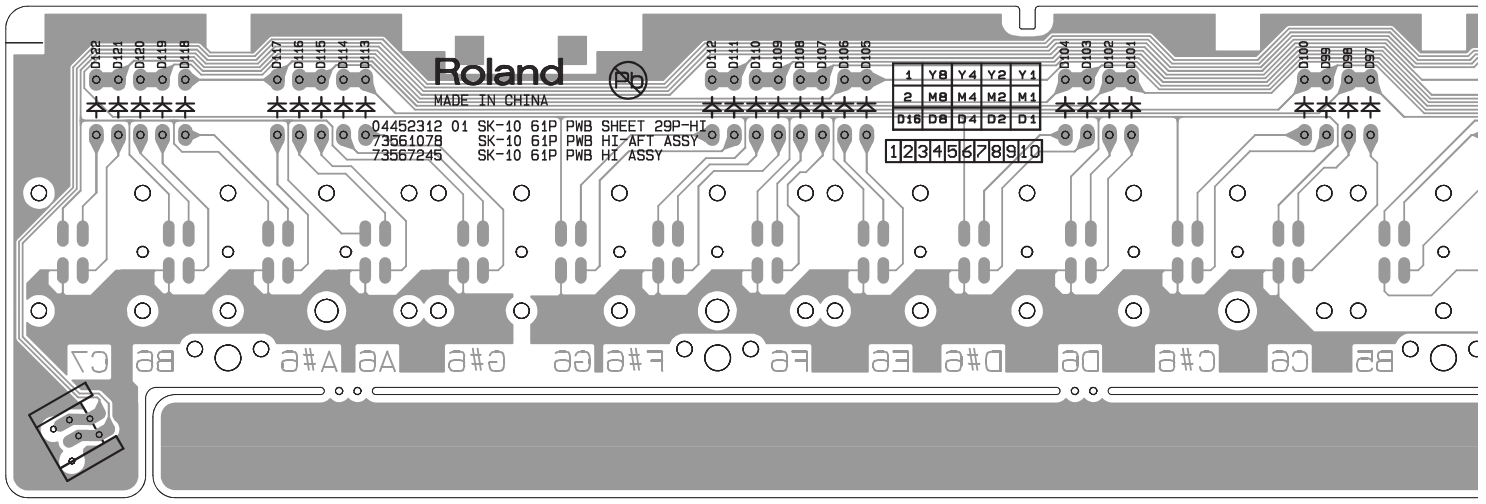
Keyboard Parts List (Fantom-G8: PHA2-F)

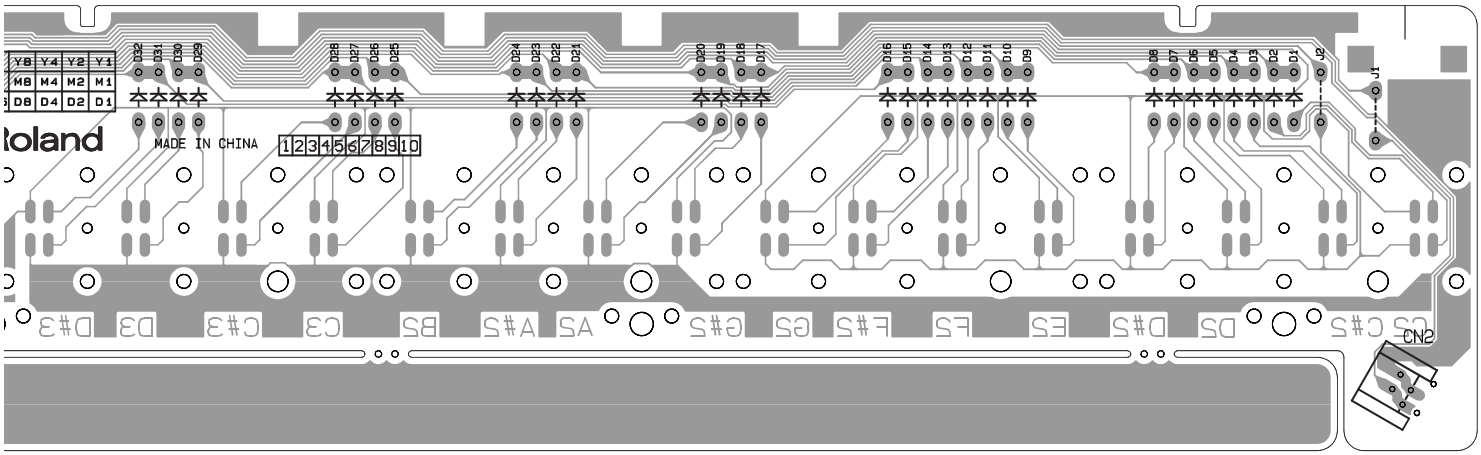


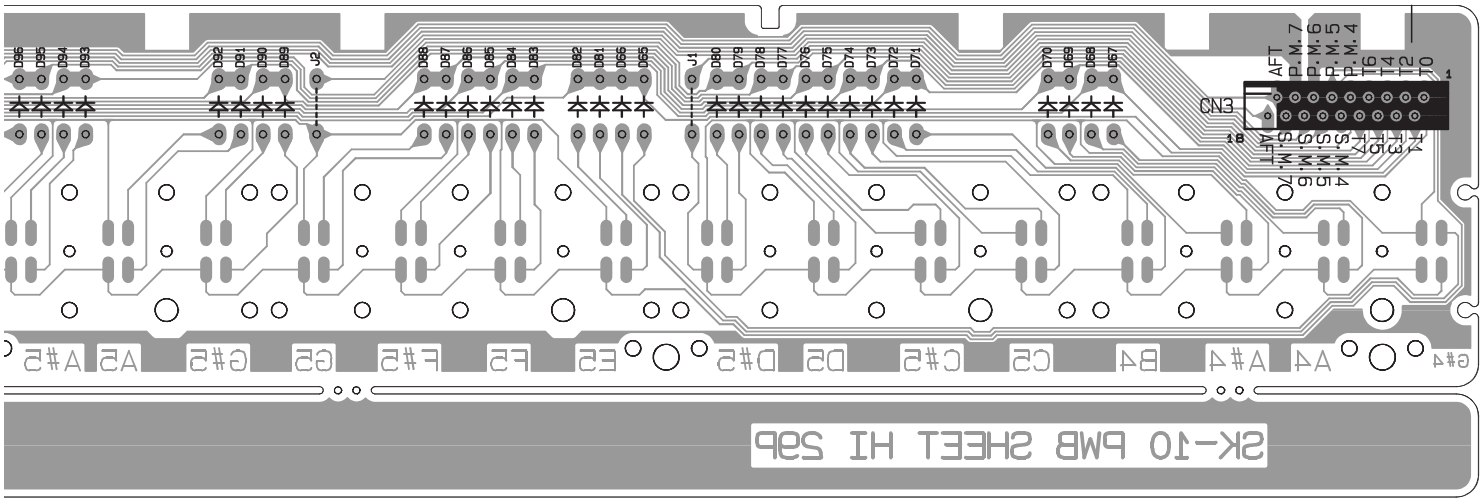
No.	Part Code	Part Name	Description	Q'ty
	5100001543	KEYBOARD ASSY	PHA2-F	
1	04340201	N-KEY A	PHA2	7
	04340212	N-KEY B	PHA2	8
	04340223	N-KEY C	PHA2	7
	04340234	N-KEY D	PHA2	7
	04340245	N-KEY E	PHA2	7
	04340256	N-KEY F	PHA2	7
	04340267	N-KEY G	PHA2	7
	04340278	N-KEY A'	PHA2	1
	04340289	N-KEY C'	PHA2	1
2	04450812	SHARP KEY	PHA2	36
3	73561001	HAMMER-1	PHA2	24
	73561012	HAMMER-2	PHA2	24
	73561023	HAMMER-3	PHA2	24
	73561034	HAMMER-4	PHA2	16
	********	CHASSIS 88P-B ASSY	PA-5	1
	* *PA-5 CHASSIS 88P-B ASSY includes the following parts.*			
4	********	CHASSIS 88P-A	PA-5 88P-A	1
5	02895767	SUB CHASSIS	PA-5 12P	7
	02895778	SUB CHASSIS	PA-5 4P	1
6	01894923	GUIDE BUSHING C	PA-4A	52
7	00019912	GUIDE BUSHING S-KEY	PA-4	36
8	02016901	KEY CUSHION A		1
9	04013301	AFTERTOUCH-B (88P)	PA-588	1
10	02904401	KEY CUSHION B		1
11	02016945	HAMMER CUSHION B		1
12	02904390	HAMMER CUSHION D	PA-5	1
13	40012256	SCREW M3X10	BINDING B-TITE FE ZC	37
14	5100001542	PHA2 PWB SET FOR ORDER		1
	* *This unit includes the following parts.*			
15	04671145	RUBBER SWITCH 12P	PHA2	8
16	40011267	SCREW 3X6	BINDING TAPTITE P FE ZC	22
17	02016989	BNCD-P=1.25-K-16-80		1

Keyboard Circuit Board (Fantom-G6: SK-1061-A)

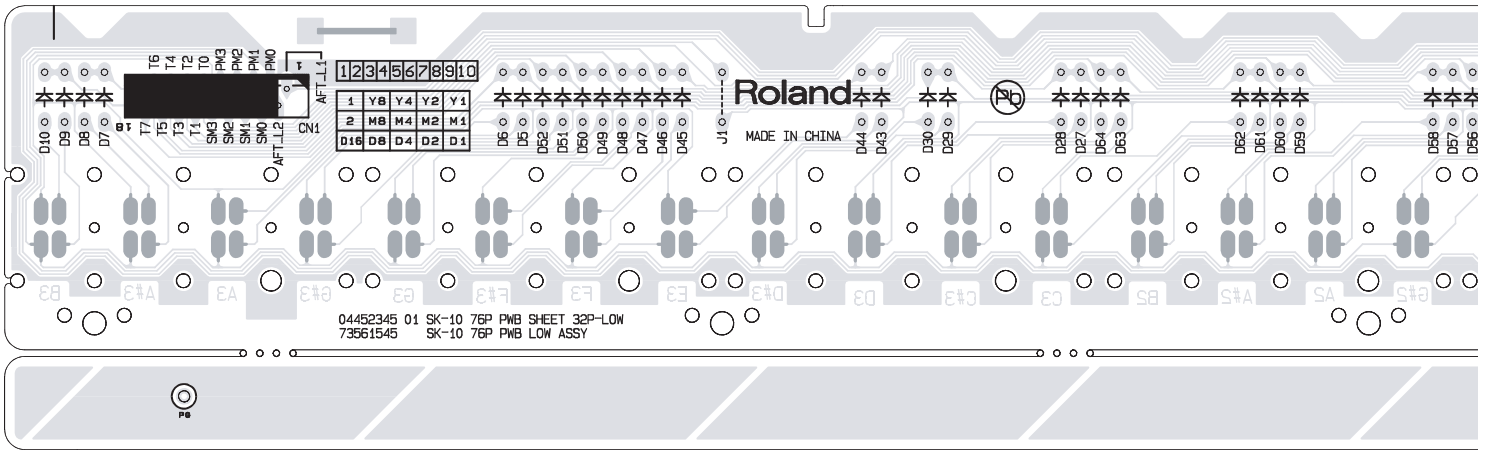


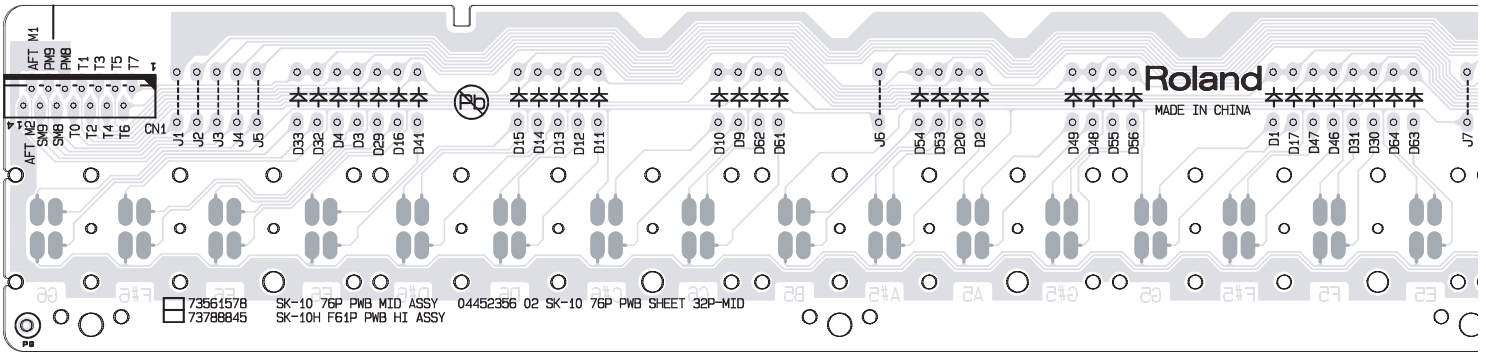


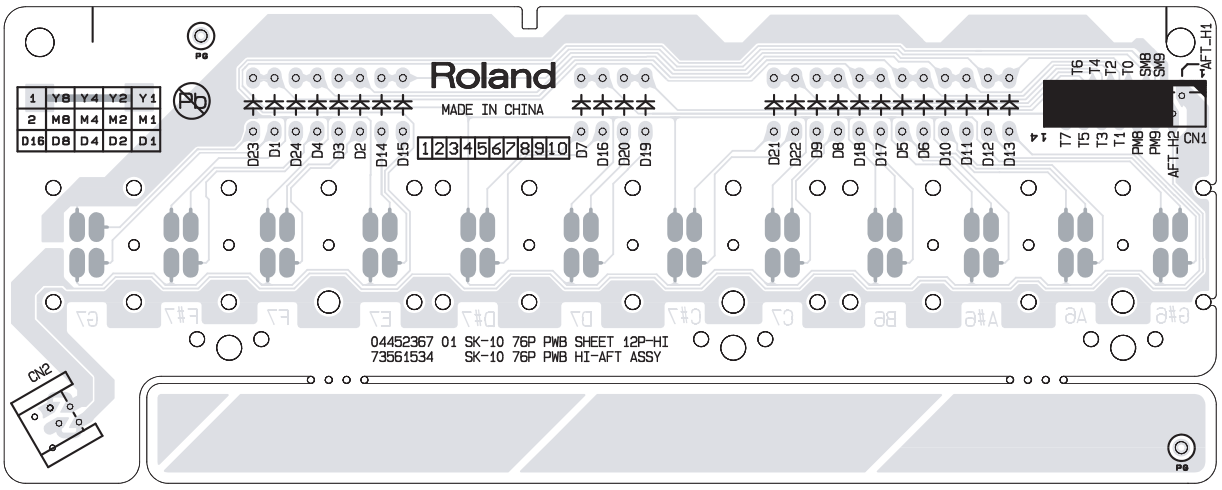

Roland
MADE IN CHINA
1 2 3 4 5 6 7 8 9 10
CN2

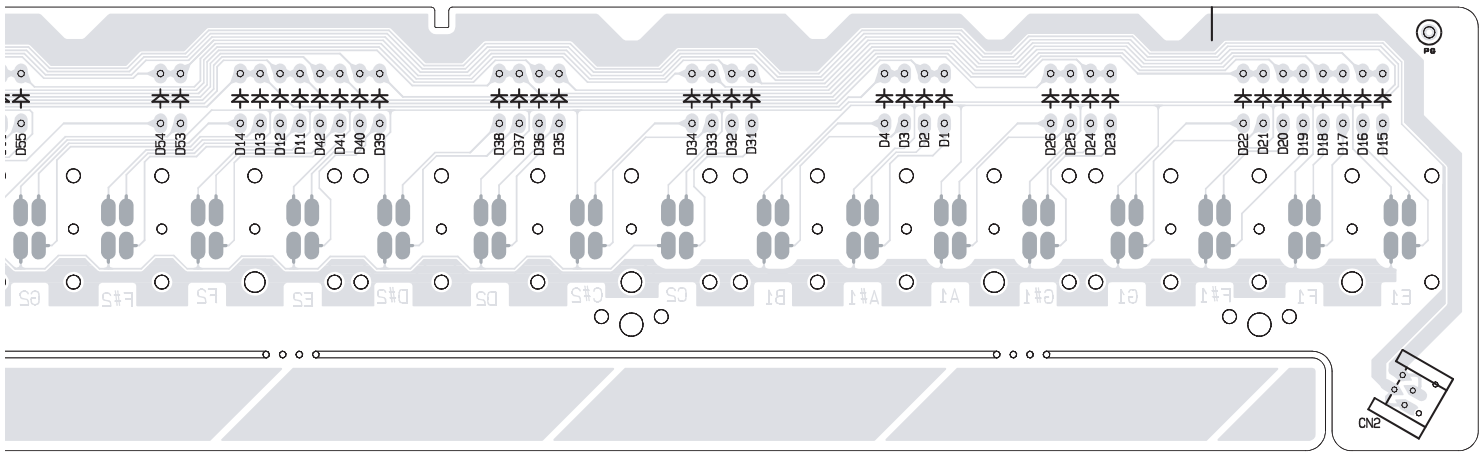

CN3
SK-10 PWB SHEET HI 2SP

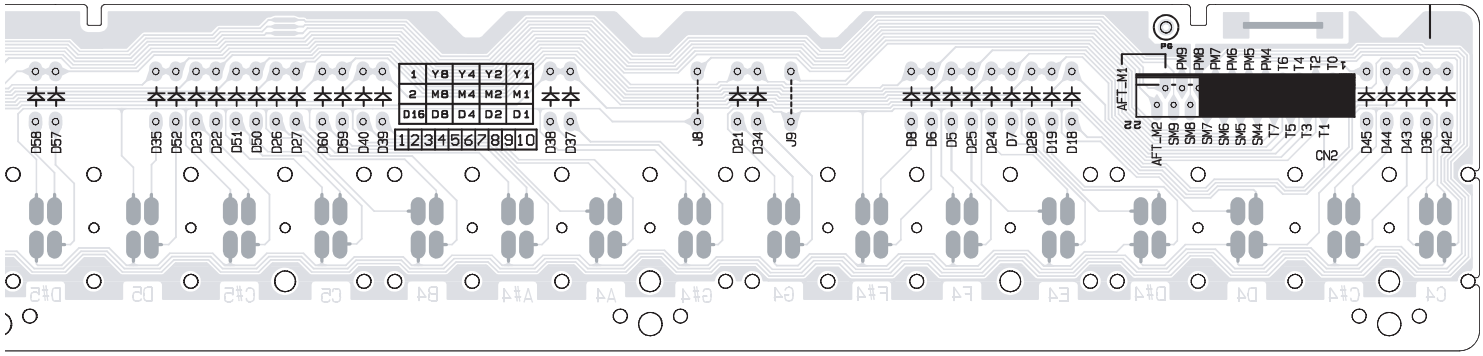
Keyboard Circuit Board (Fantom-G7: SK-1076-C)








D55
D54
D53
D14
D13
D12
D11
D42
D41
D40
D39
D38
D37
D36
D35
D34
D33
D32
D31
D4
D3
D2
D1
D26
D25
D24
D23
D22
D21
D20
D19
D18
D17
D16
D15
PG
CN2


D58
D57
D35
D52
D23
D22
D51
D50
D26
D27
D60
D59
D40
D39
1 Y8 Y4 Y2 Y1
2 M8 M4 M2 M1
D16 D8 D4 D2 D1
1 2 3 4 5 6 7 8 9 10
D38
D37
J8
D21
D34
J9
D8
D6
D5
D25
D24
D7
D28
D19
D18
PG
AFT_M1
AFT_M2
PM3
PM8
PM7
PM6
PM5
PM4
T6
T4
T2
T0
SM9
SM8
SM7
SM6
SM5
SM4
T7
T5
T3
T1
CN2
D45
D44
D43
D36
D42

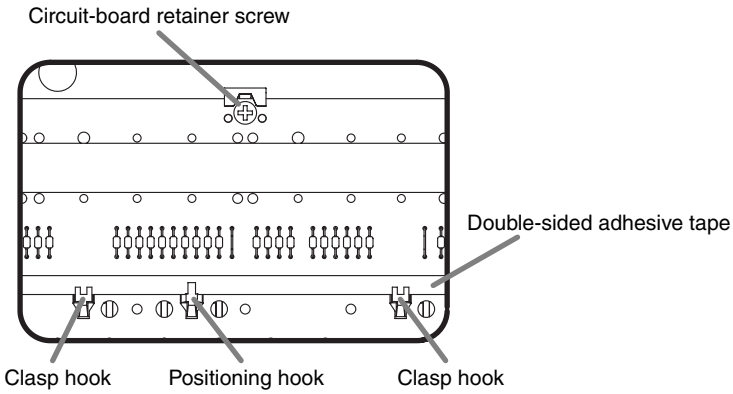
Keyboard Assembly Procedure (Fantom-G6: SK-1061-A, Fantom-G7: SK-1076-C)

How to Install the Contact Circuit Board

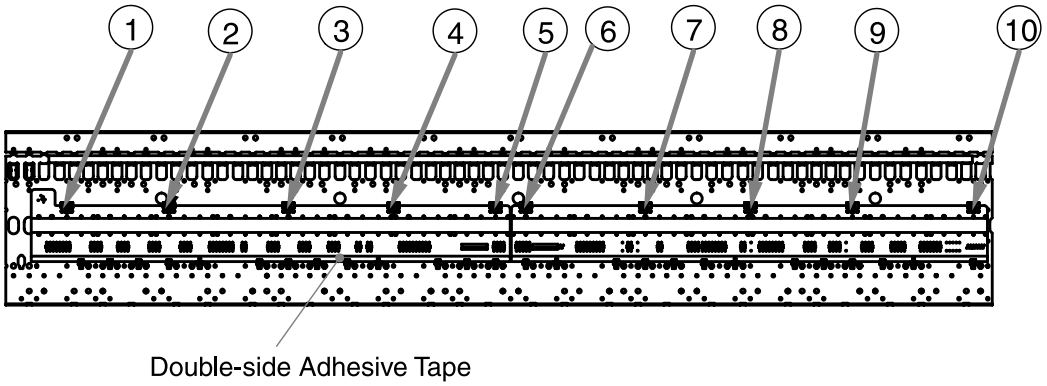
NOTE

The service-use contact circuit board (#04567412, #04671889) is supplied with the rubber switches mounted. To prevent problems with sound generation due to dust contamination, do not detach the rubber switches.

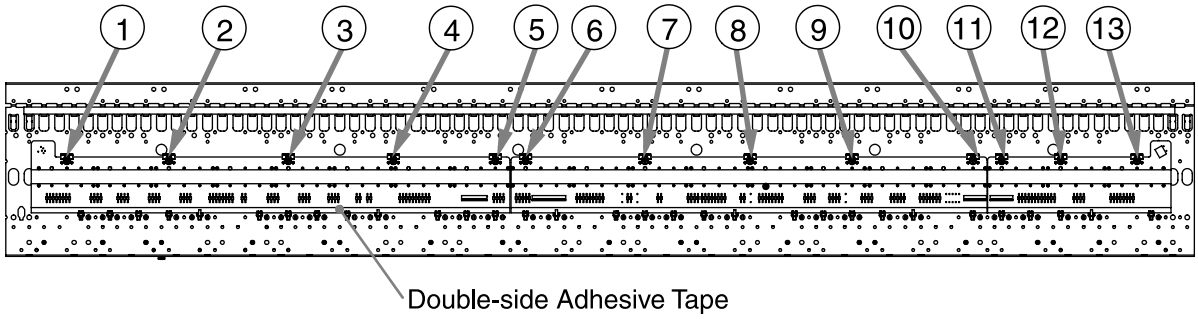
1. Turn the keyboard chassis upside-down.
2. Peel off the backing paper from the double-sided adhesive tape affixed to the edge surfaces of the contact circuit board.
3. Align the notch in the contact circuit board with the **positioning hook** on the keyboard chassis, and install the circuit board so that it is clasped by the **clasp hooks**.



4. Working from the bass section to the treble section, tighten the screws in the numbered sequence shown in the figure.



Fantom-G6



Fantom-G7

* *If the contact circuit board is warped, tighten while pressing down lightly on the center of the circuit board.*

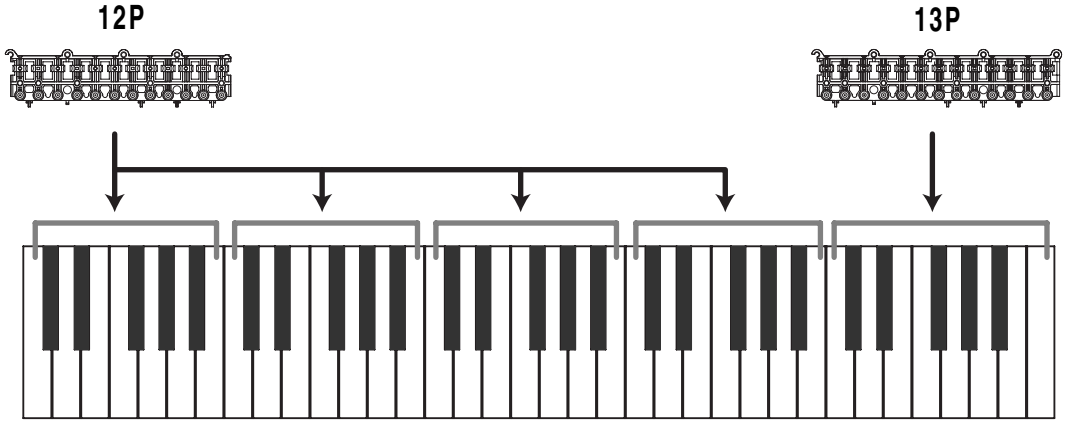
* *If using an electric screwdriver, set the screw-tightening torque at 0.8 N. Applying excessive force to the circuit board may damage the pattern and cause problems with sound generation.*

Arrangement of the Sub-chassis (Fantom-G6)

The sub-chassis are of two types having a different number of keys.

#04452190	SUB CHASSIS 12P
#04452212	SUB CHASSIS 13P

When replacing, refer to the figure below and install the specified sub-chassis at the specified location.

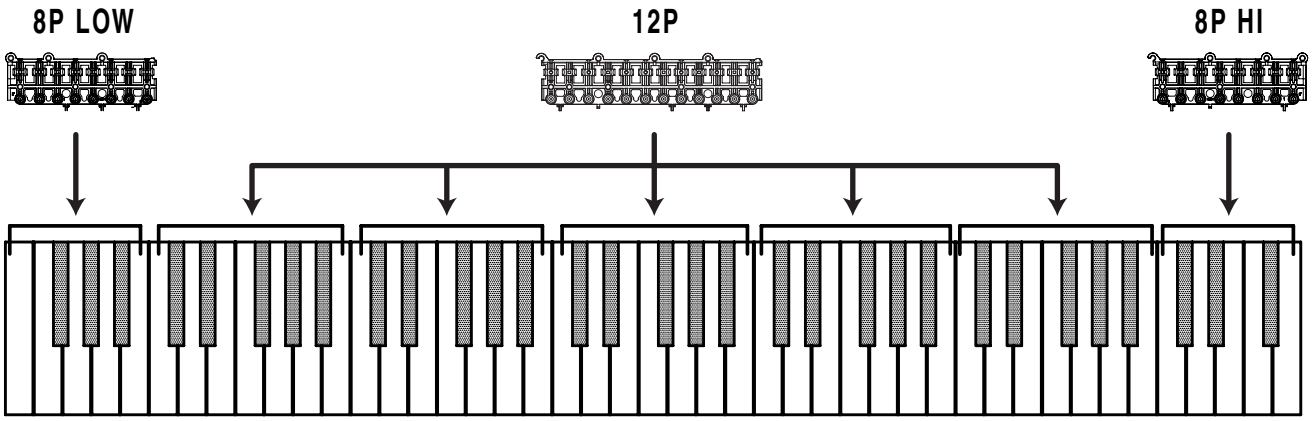


Arrangement of the Sub-chassis (Fantom-G7)

The sub-chassis are of three types having a different number of keys.

#04452190	SUB CHASSIS 12P
#04452223	SUB CHASSIS 8P HI
#04452234	SUB CHASSIS 8P LOW

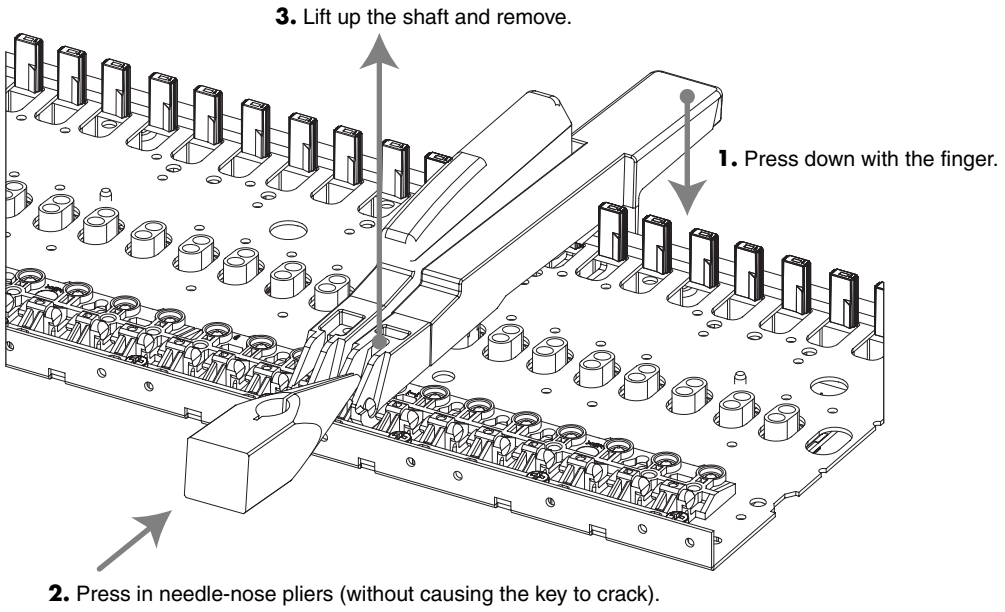
When replacing, refer to the figure below and install the specified sub-chassis at the specified location.



How to Remove Keys

1. Press down on the tip of the key with the finger.
2. Insert needle-nose pliers into the U-shaped groove on the shaft side and press in the direction of the arrow.
3. Lift up the shaft and detach the key from the chassis.

* *Before removing a black key, be sure to first remove the white keys on both sides.*

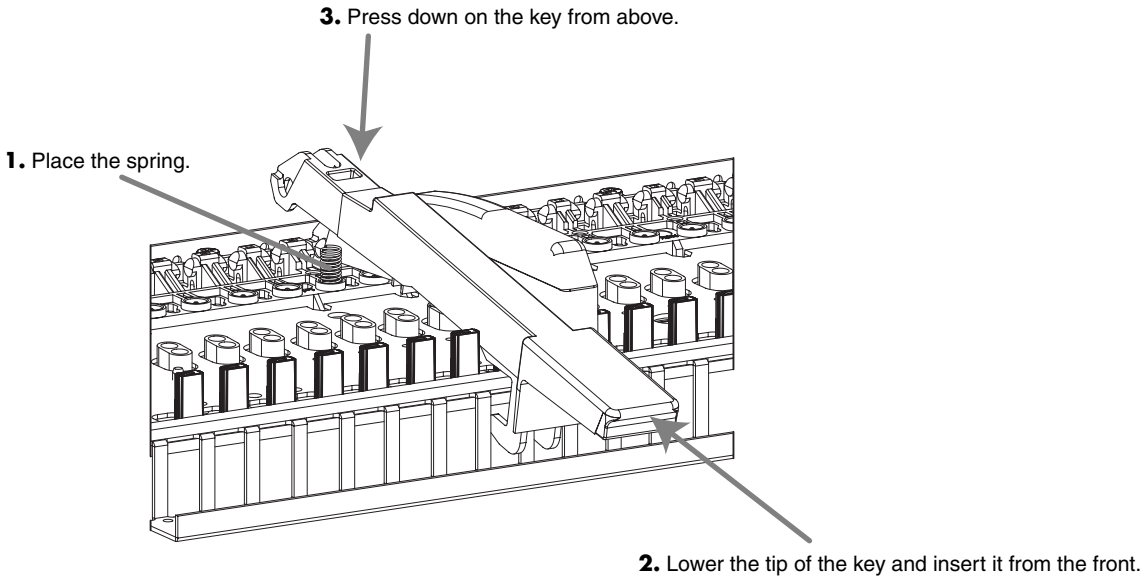


How to Attach Keys

1. Place the spring (#01231534) on the chassis.
2. With the tip of the key angled downward, insert the key in the direction of the arrow shown in the figure.
3. Press down near the key shaft from above and fit the key into the shaft.

* *Attaching a key with the spring not upright results in altered touch. Make sure the spring is not squeezed.*

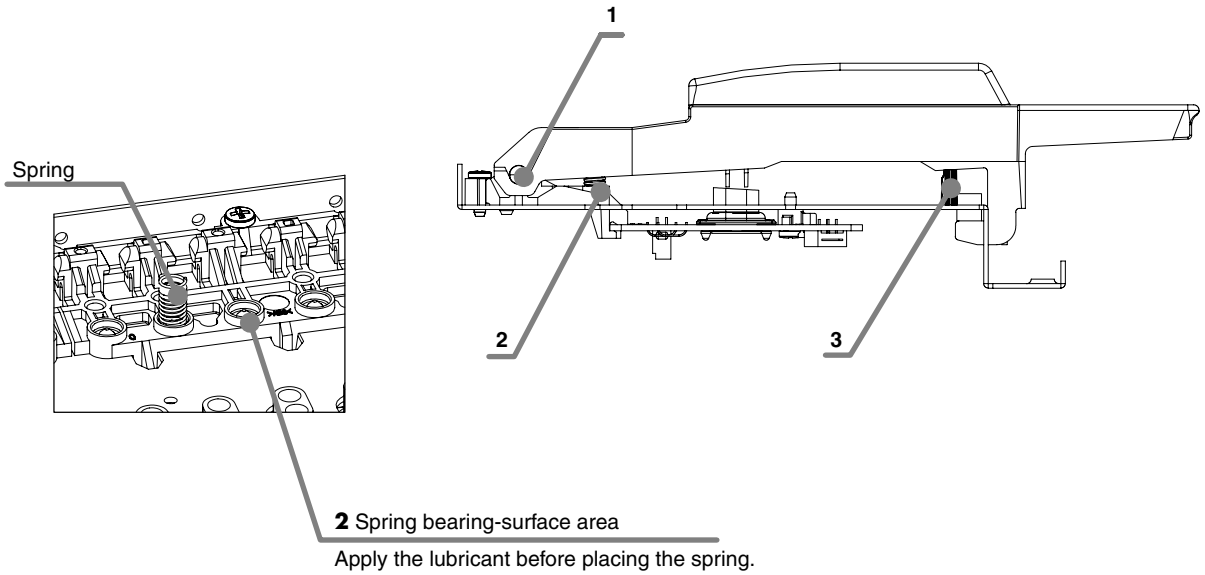
* *Be sure to attach a black key while the white keys on both are uninstalled.*



Greasing Points

When replacing keys or the sub-chassis, apply the specified lubricant at the locations shown in the figure.

	Location	Lubricant
1	Key and sub-chassis shaft area	MOLYKOTE G-1039 (#17041858) pink
2	Spring bearing-surface area	MOLYKOTE G-1039 (#17041858) pink
3	White- and black-key guide-bushing sides	FLOIL G-336A (#17049543) white

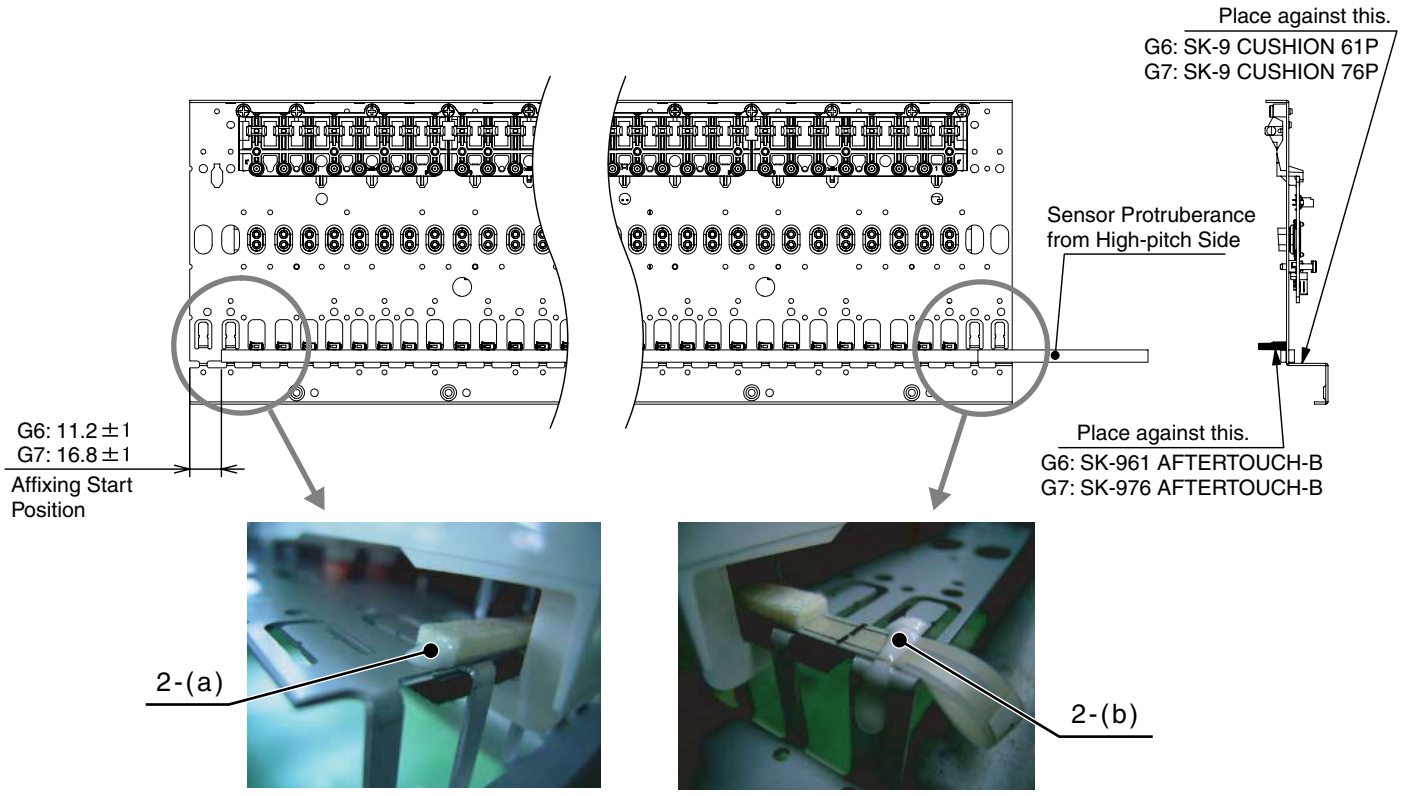


2 Spring bearing-surface area

Apply the lubricant before placing the spring.

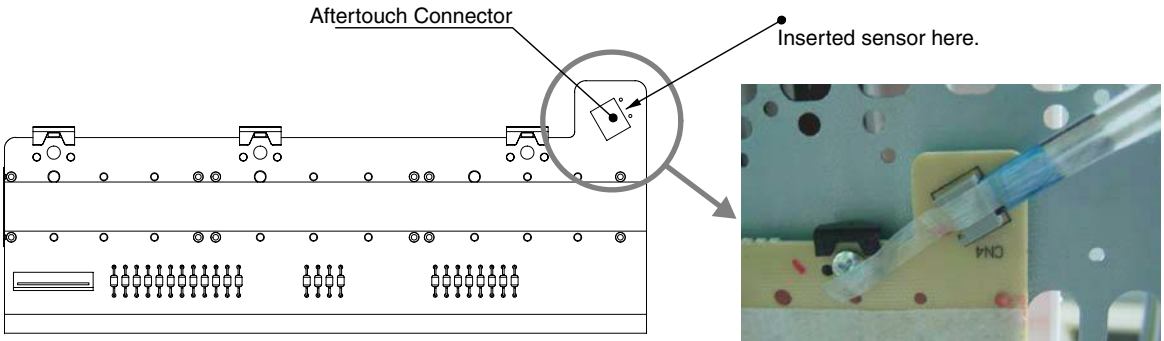
Installing the AFTERTOUCH and CUSHIONs

1. Affix from the "Affixing Start Position" shown in the figure below.
   Place the AFTERTOUCH (white) against the guide bushing, and the SK-9 CUSHION (green) against the chassis.
2. Apply Syrex to the AFTERTOUCH 2-(a)/(b) areas.
   Apply so that the 2-(a) cushion end is coated, and the 2-(b) sensor is coated.



3. As shown in the figure below, insert the sensor into the HI board's connector and secure it with filament tape.

   * *Avoid covering the board's filter with the filament tape.*

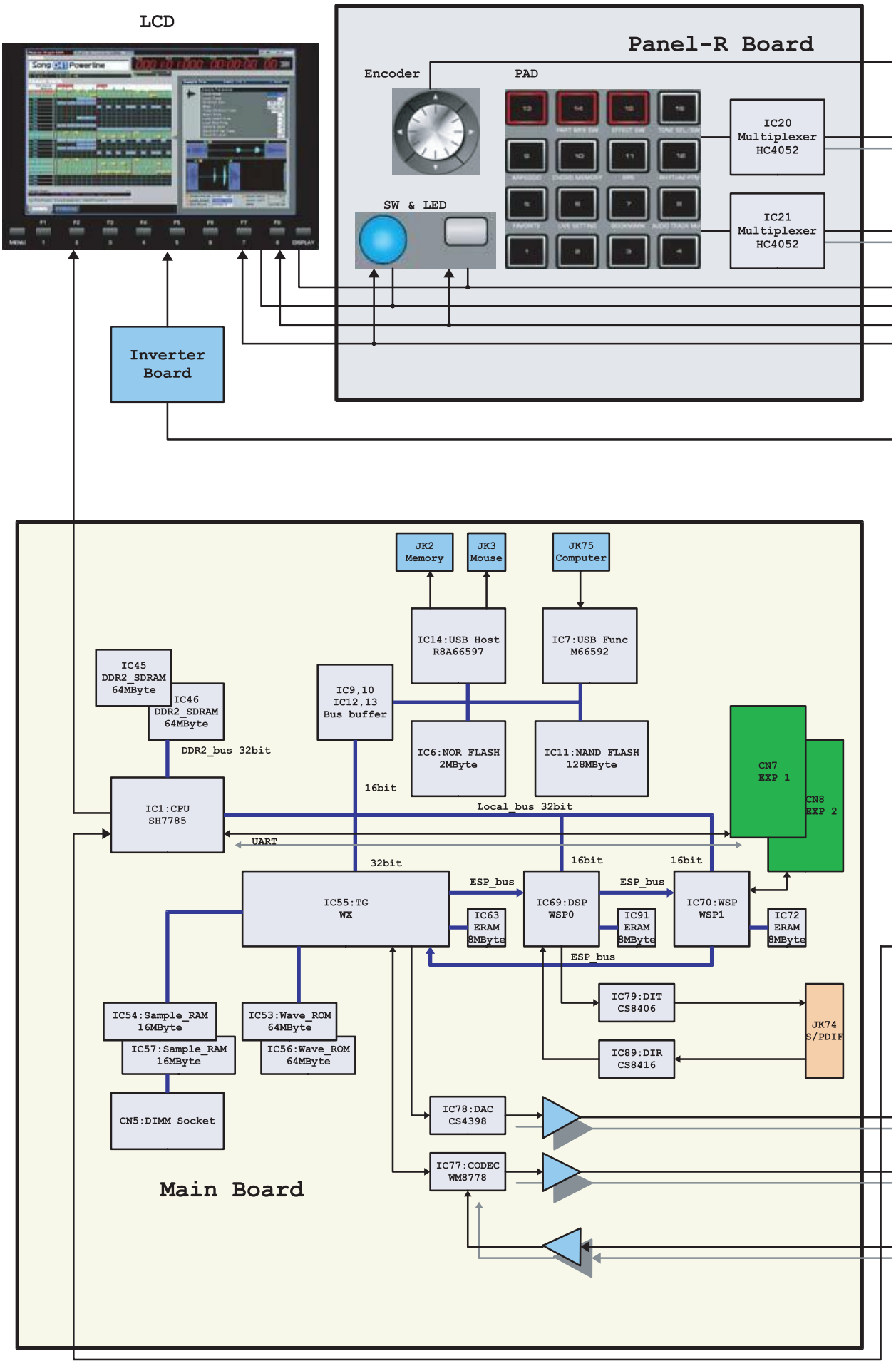


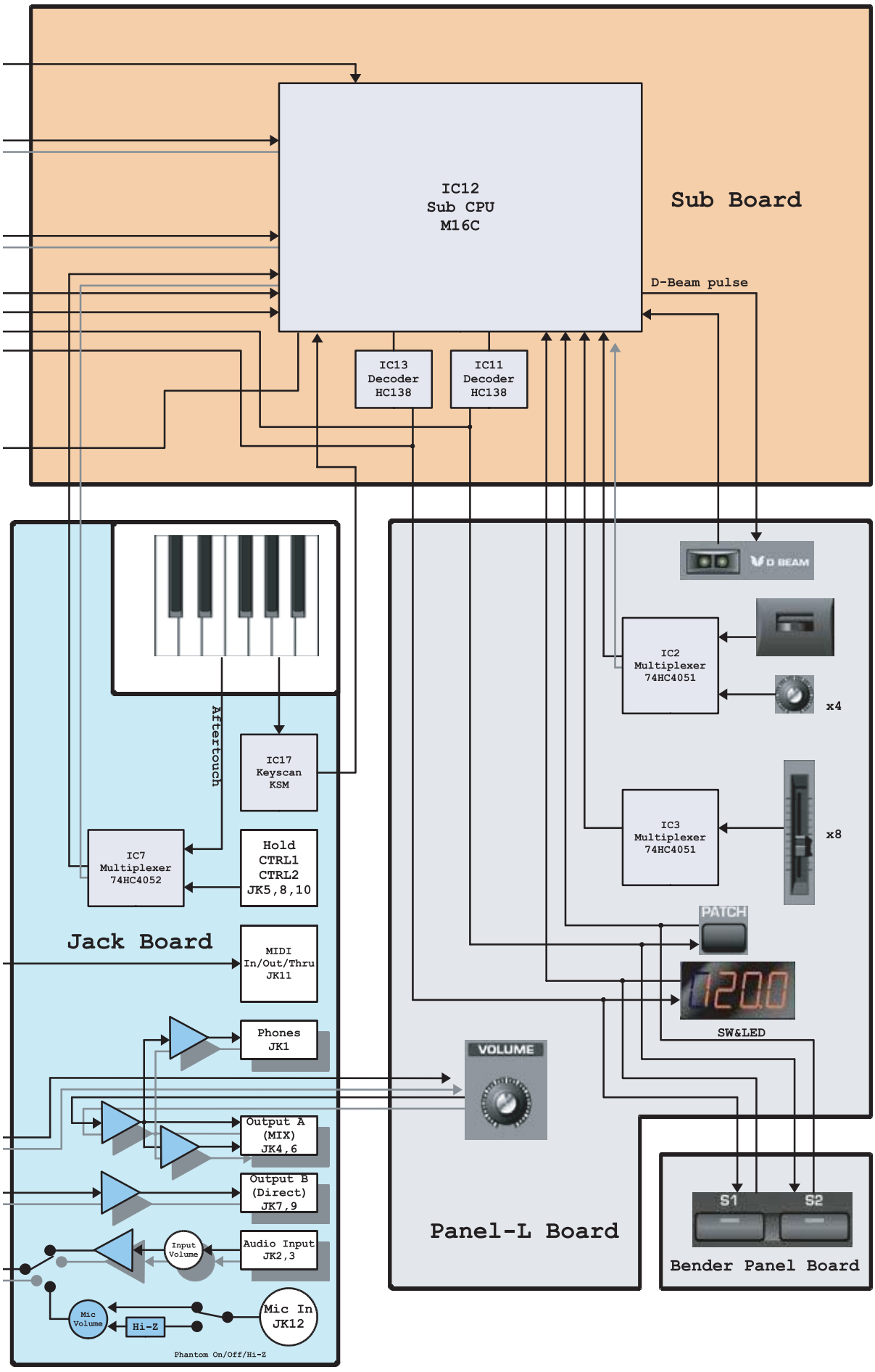
G6: SK-10 61P PWB HI ASSY
G7: SK-10 76P PWB HI ASSY

Keyboard Assembly Procedure (Fantom-G8: PHA2-F)

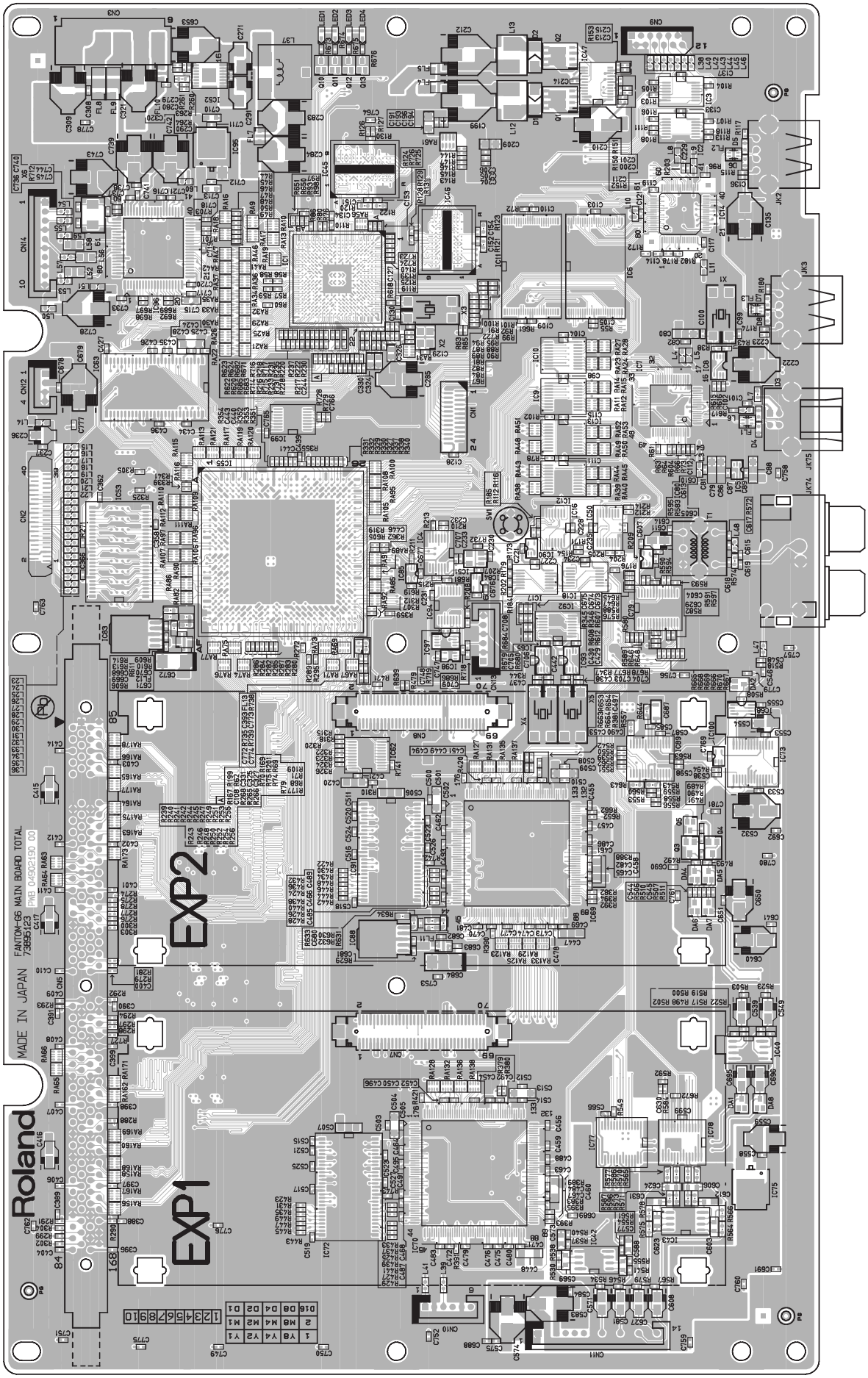
Refer to "SERVICE NOTES ENGLISH (COPY) FOR PHA2-D/DM/E (#17058532E0)."

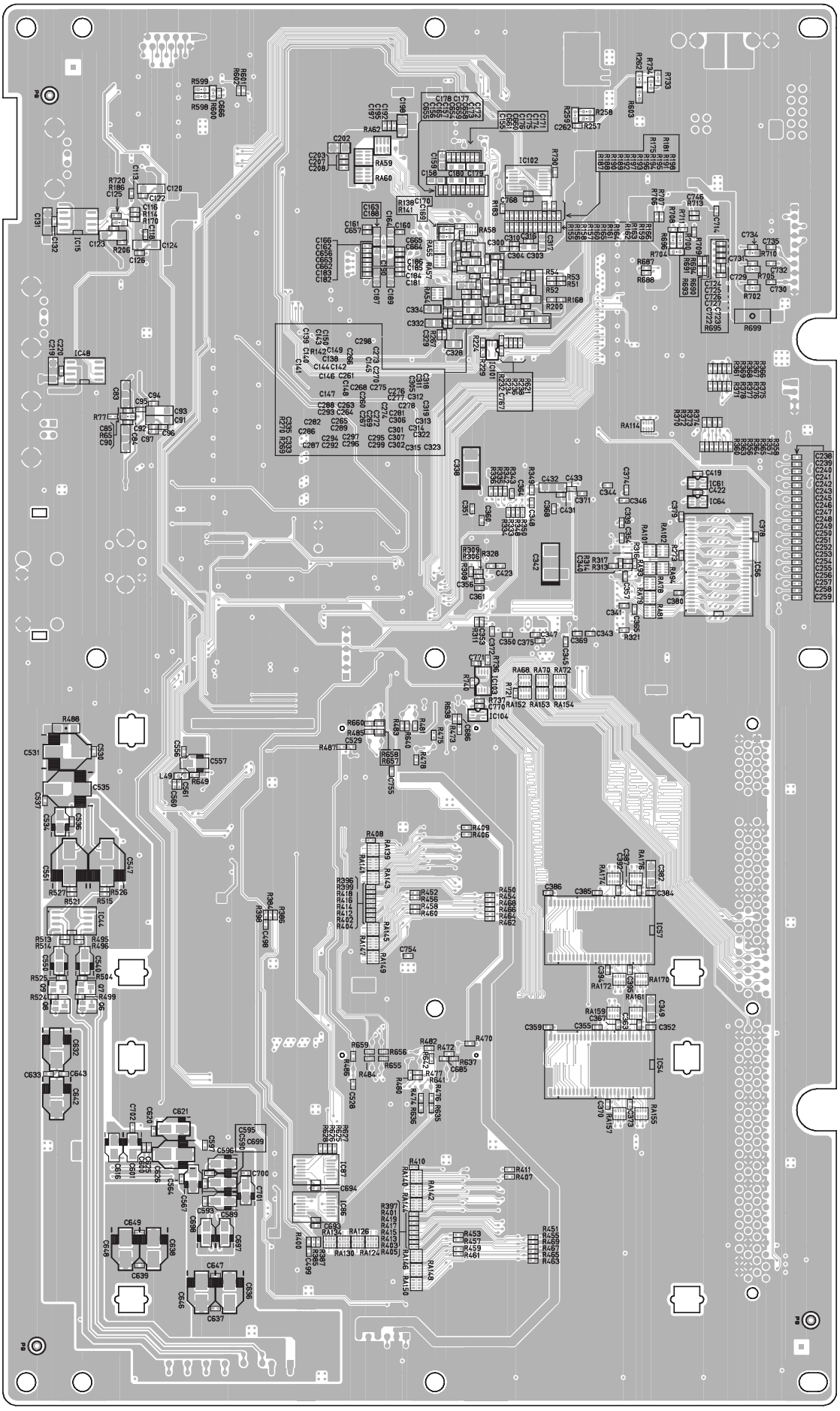
Block Diagram



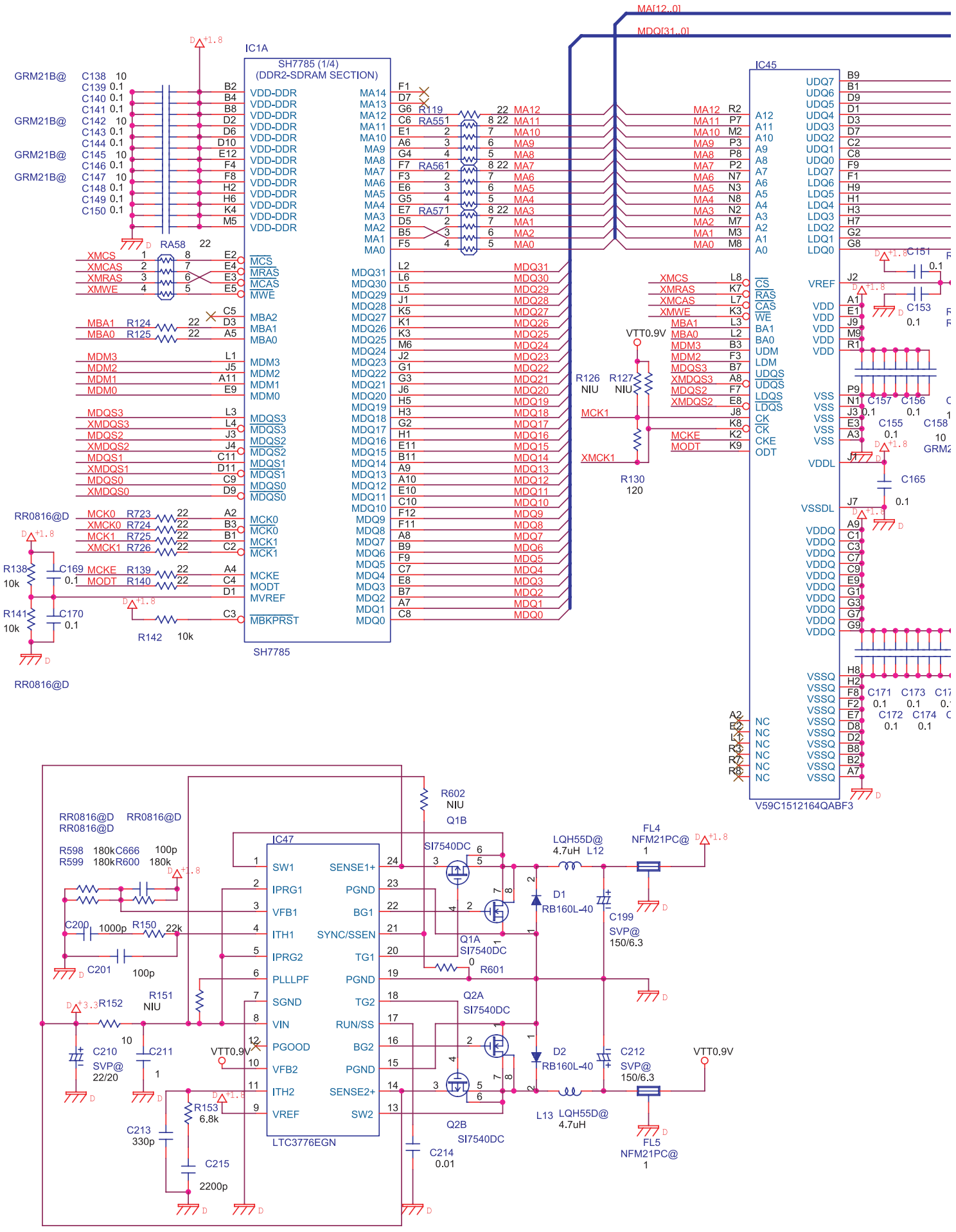

IC12
Sub CPU
M16C
Sub Board
D-Beam pulse
IC13
Decoder
HC138
IC11
Decoder
HC138
D BEAM
IC2
Multiplexer
74HC4051
x4
IC3
Multiplexer
74HC4051
x8
PATCH
120.0
SW&LED
Aftertouch
IC17
Keyscan
KSM
IC7
Multiplexer
74HC4052
Hold
CTRL1
CTRL2
JK5,8,10
Jack Board
MIDI
In/Out/Thru
JK11
Phones
JK1
VOLUME
Output A
(MIX)
JK4,6
Output B
(Direct)
JK7,9
Input
Volume
Audio Input
JK2,3
Mic
Volume
Hi-Z
Mic In
JK12
Phantom On/Off/Hi-Z
Panel-L Board
S1
S2
Bender Panel Board

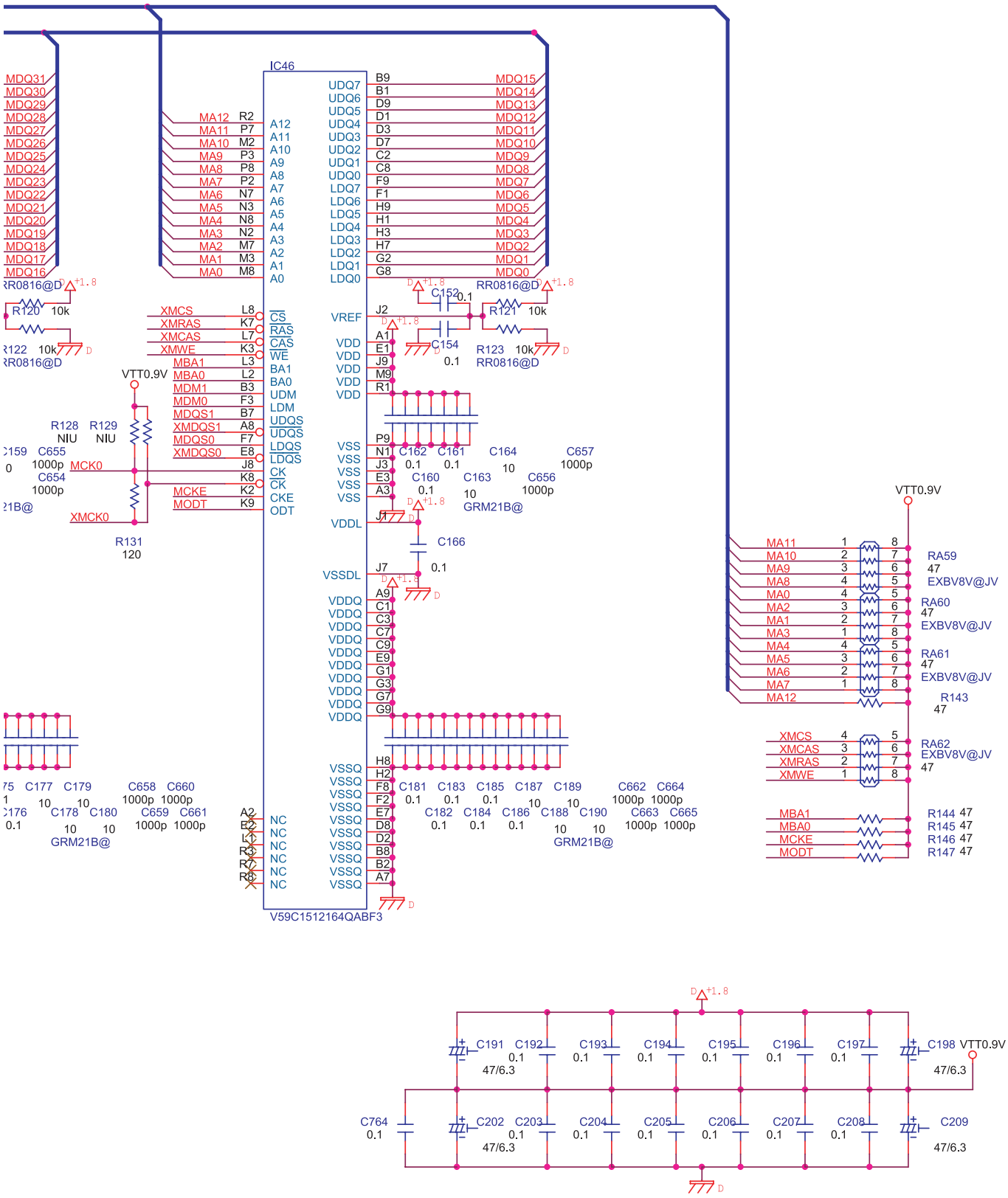
Circuit Board (Main Board)



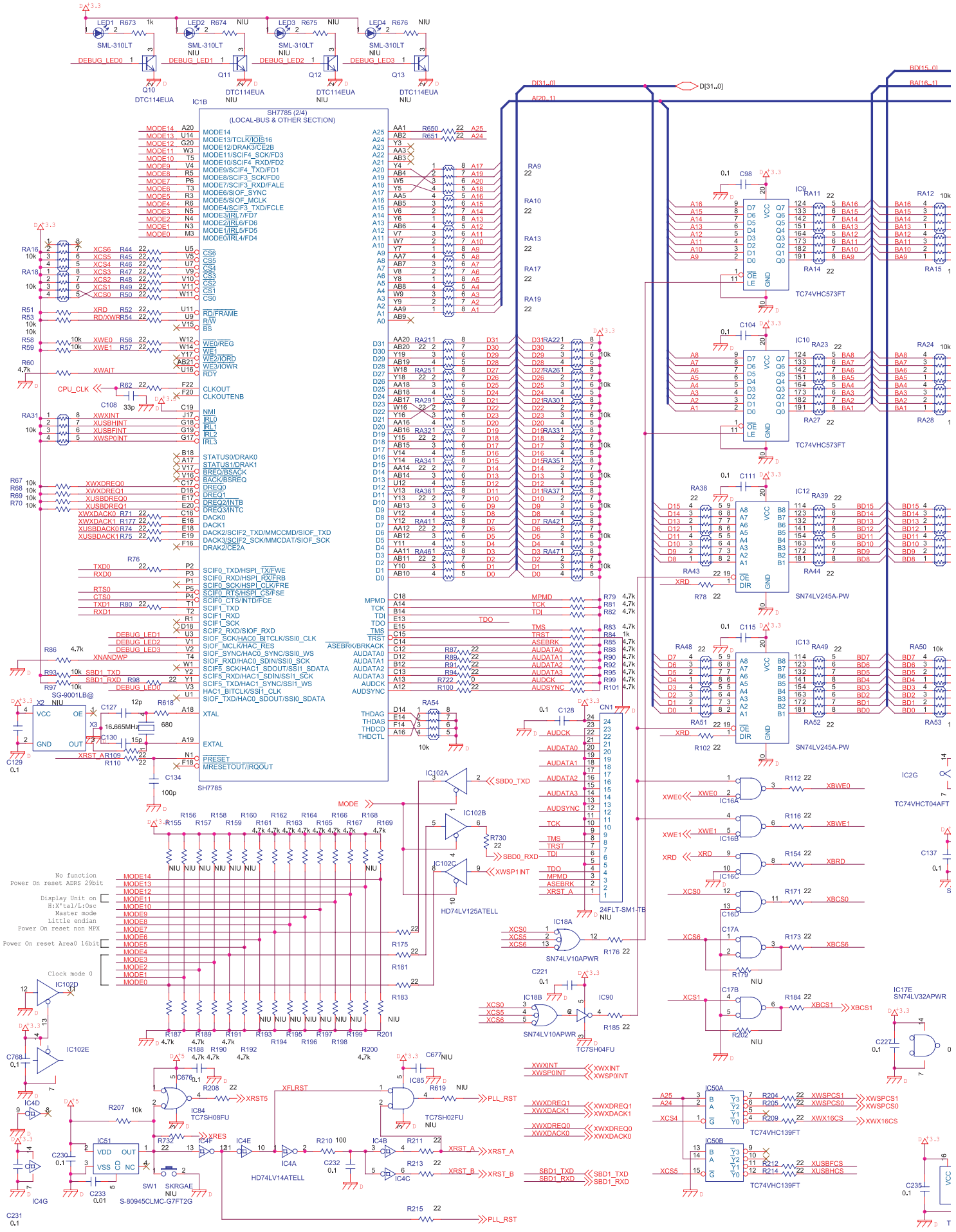


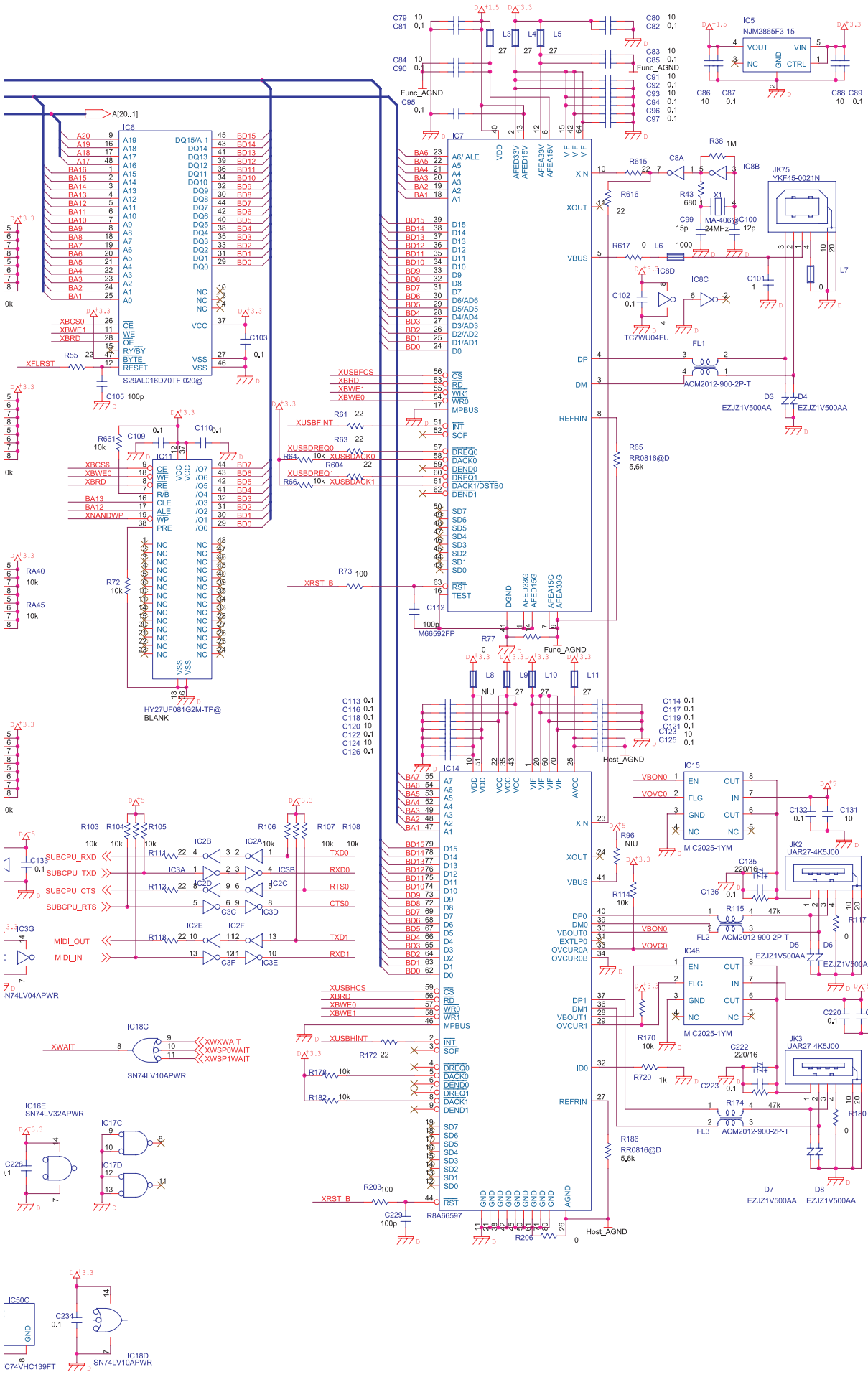
Circuit Diagram (Main Board: 1/8)



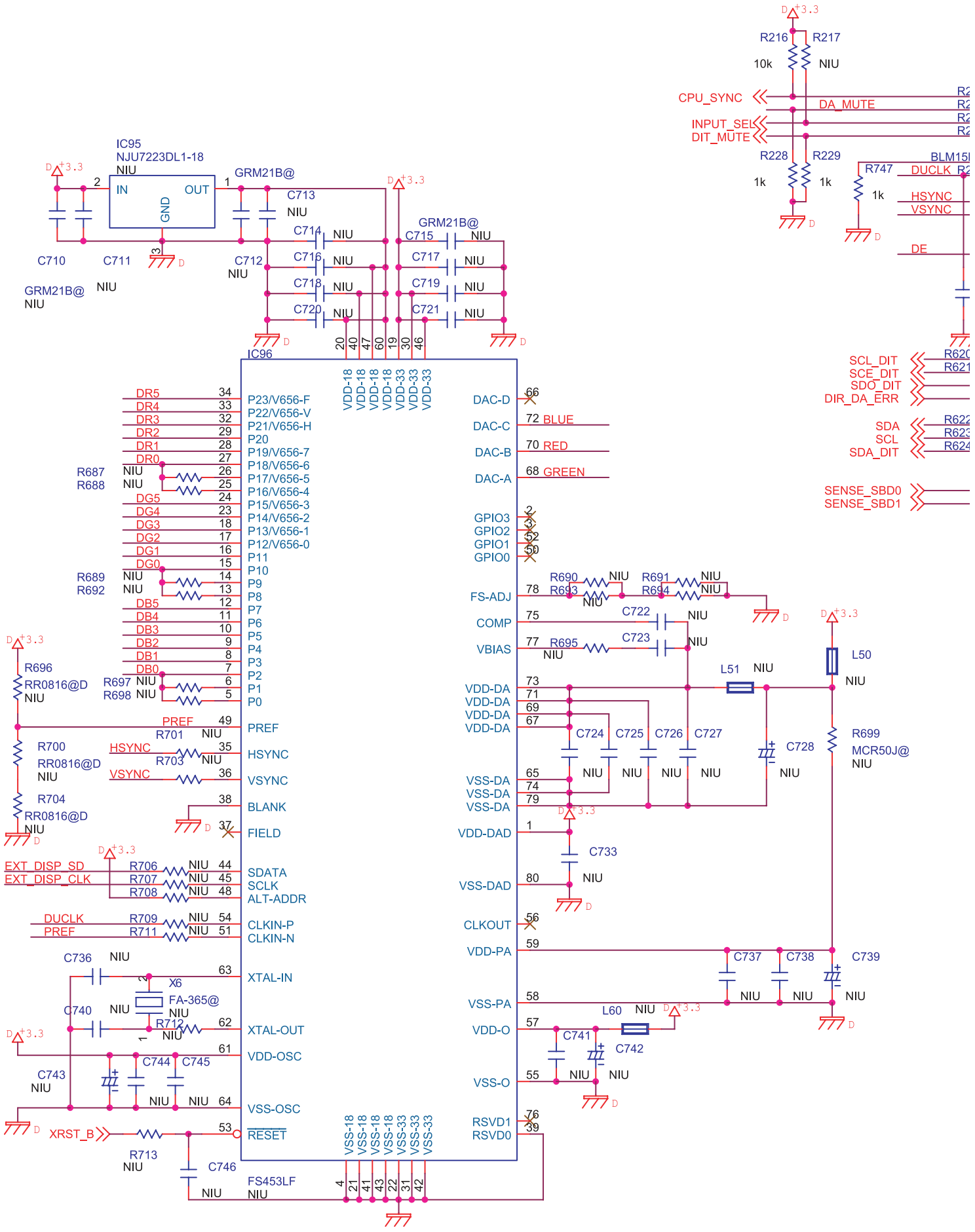

IC46
V59C1512164QABF3
VTT0.9V
RR0816@D
R120 10k
R122 10k
R121 10k
R123 10k
R128 NIU
R129 NIU
R131 120
R143 47
RA59 47 EXBV8V@JV
RA60 47 EXBV8V@JV
RA61 47 EXBV8V@JV
RA62 47 EXBV8V@JV
R144 47
R145 47
R146 47
R147 47
GRM21B@

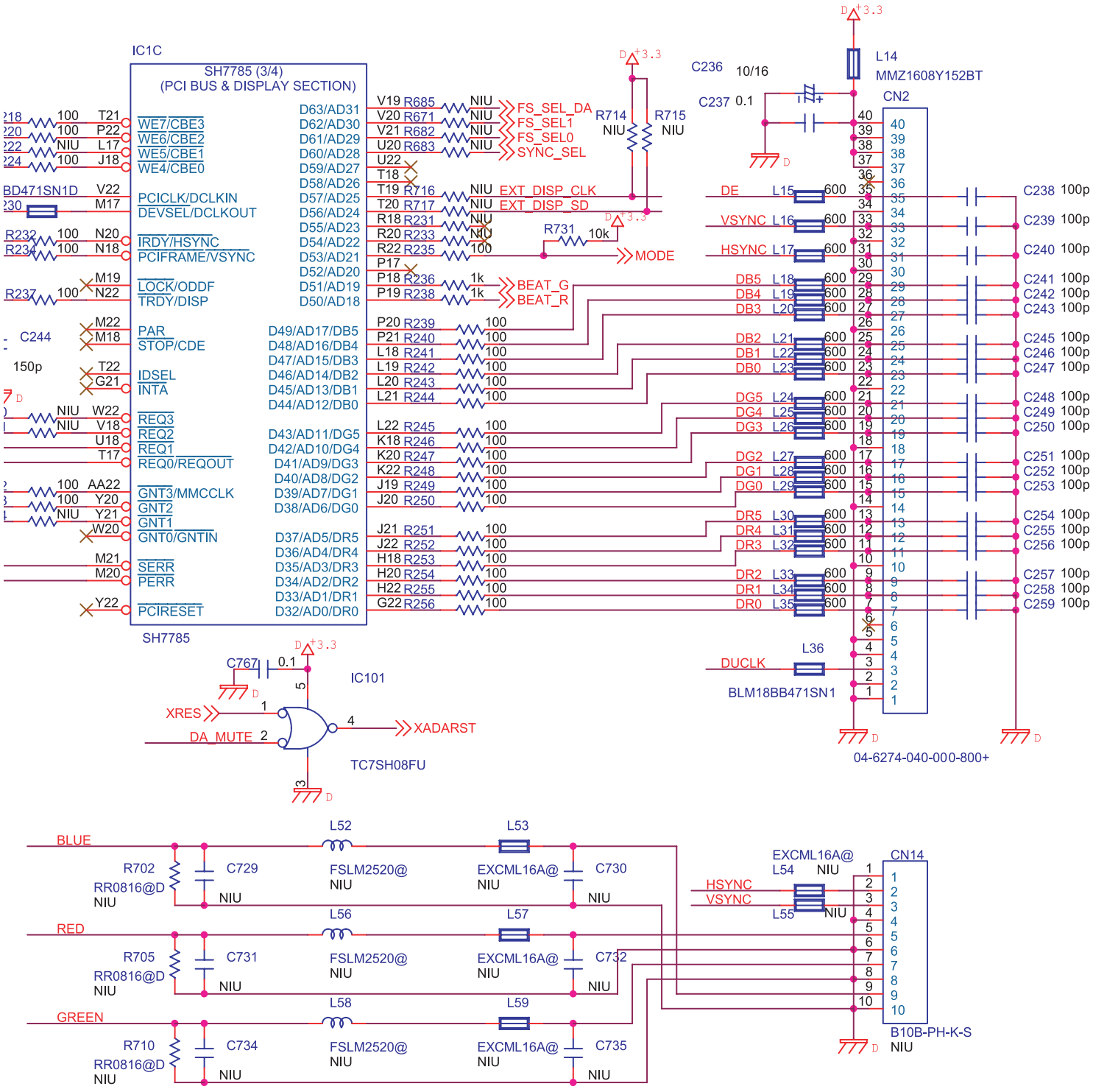
Circuit Diagram (Main Board: 2/8)




IC6
S29AL016D70TFI020@
IC11
HY27UF081G2M-TP@
BLANK
IC7
M66592FP
IC14
IC5
NJM2865F3-15
IC8A
IC8B
IC8C
IC8D
TC7WU04FU
JK75
YKF45-0021N
MA-406@24MHz
FL1
ACM2012-900-2P-T
D3
D4
EZJZ1V500AA
IC15
MIC2025-1YM
IC48
JK2
JK3
UAR27-4K5J00
IC2B
IC2A
IC3A
IC3B
IC2C
IC3C
IC2E
IC2F
IC3F
IC3E
IC3G
SN74LV04APWR
IC18C
SN74LV10APWR
IC16E
SN74LV32APWR
IC17C
IC17D
IC50C
C74VHC139FT
IC18D
SN74LV10APWR
A[20..1]
BD[15..0]
BA[16..1]
XBCS0
XBWE1
XBRD
XFLRST
XUSBFCS
XUSBFINT
XUSBDREQ0
XUSBDREQ1
XUSBDACK0
XUSBDACK1
XRST_B
XWAIT
XWXWAIT
XWSP0WAIT
XWSP1WAIT
SUBCPU_RXD
SUBCPU_TXD
SUBCPU_CTS
SUBCPU_RTS
MIDI_OUT
MIDI_IN
TXD0
RXD0
RTS0
CTS0
TXD1
RXD1
XUSBHCS
XUSBHINT
Func_AGND
Host_AGND
AGND
DGND
XIN
XOUT
VBUS
DP
DM
REFRIN
ID0
VBON0
VOVC0
VBOUT0
VBOUT1
EXTLP0
OVCUR0A
OVCUR0B
OVCUR1
DP0
DM0
DP1
DM1
NIU

Circuit Diagram (Main Board: 3/8)

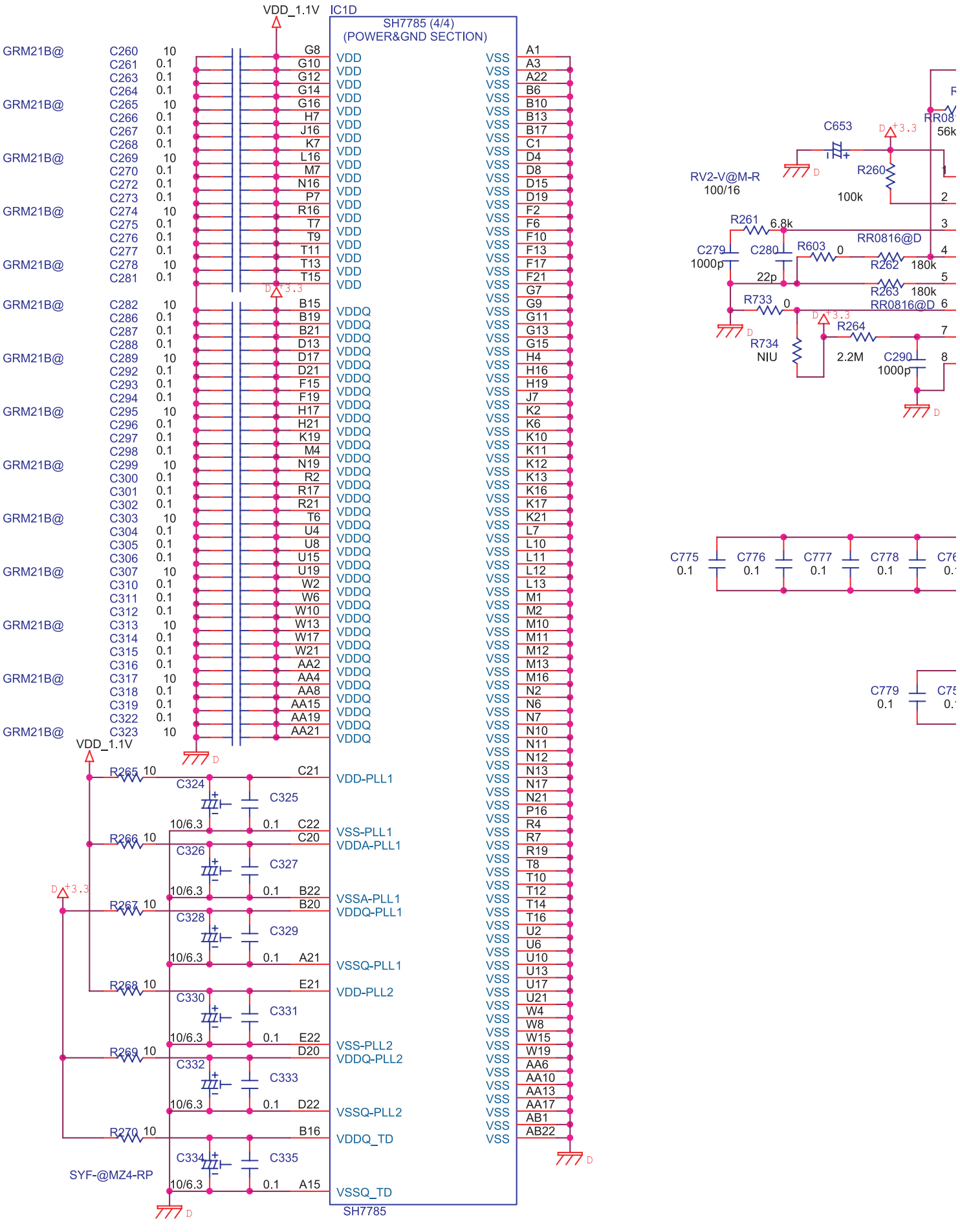


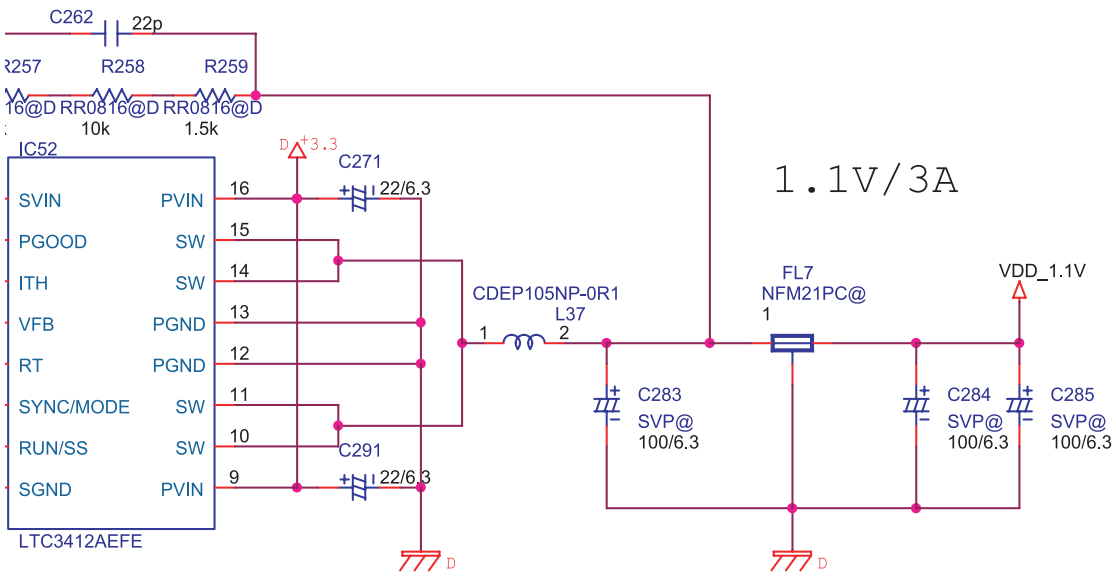


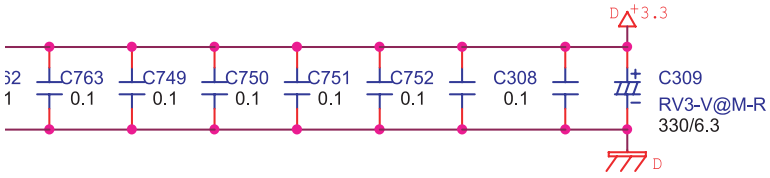
The resistors and capasitors close to the IC96.

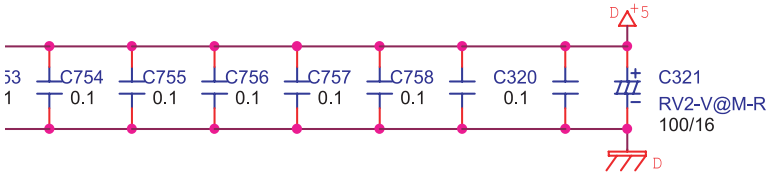
The inductors and capasitors close to the CN14

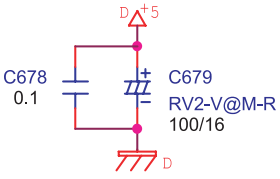
Circuit Diagram (Main Board: 4/8)

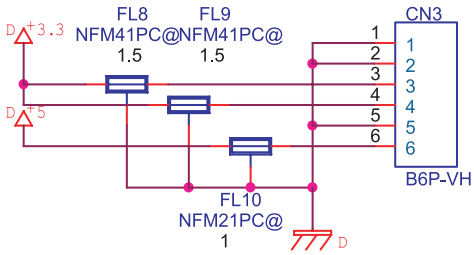




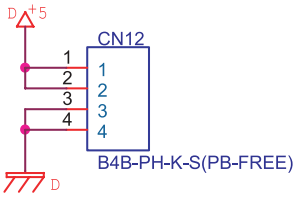






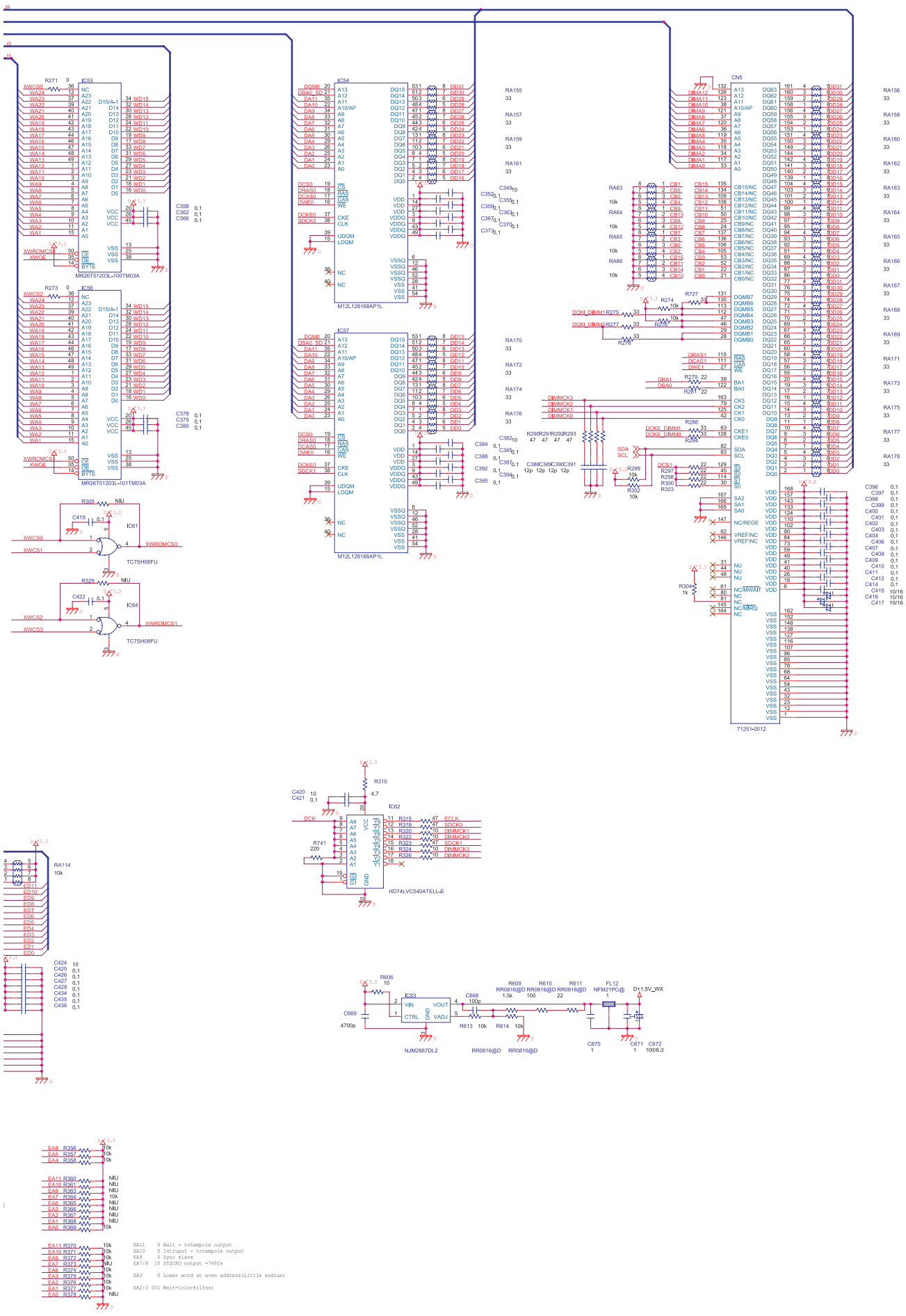


From Power supply unit

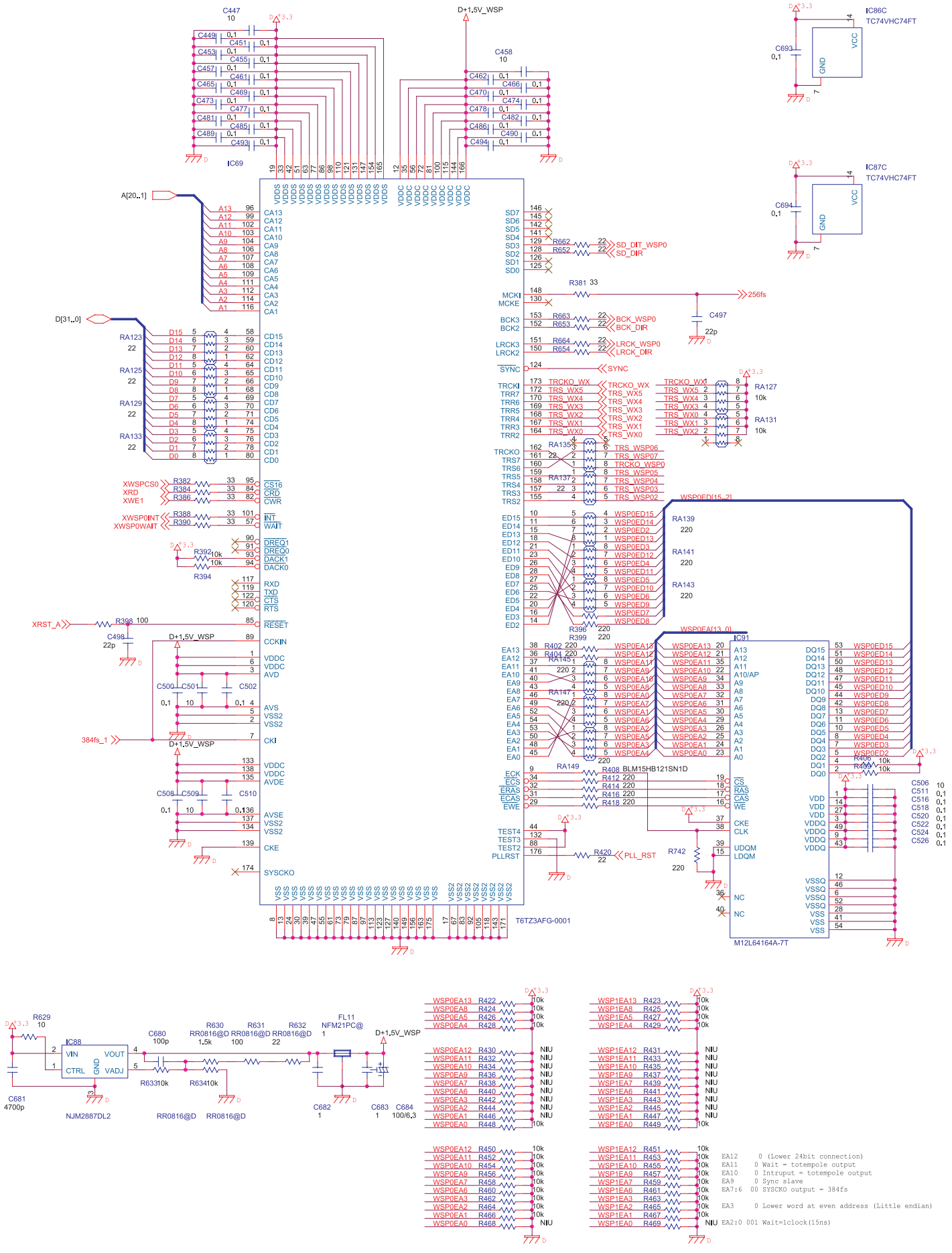


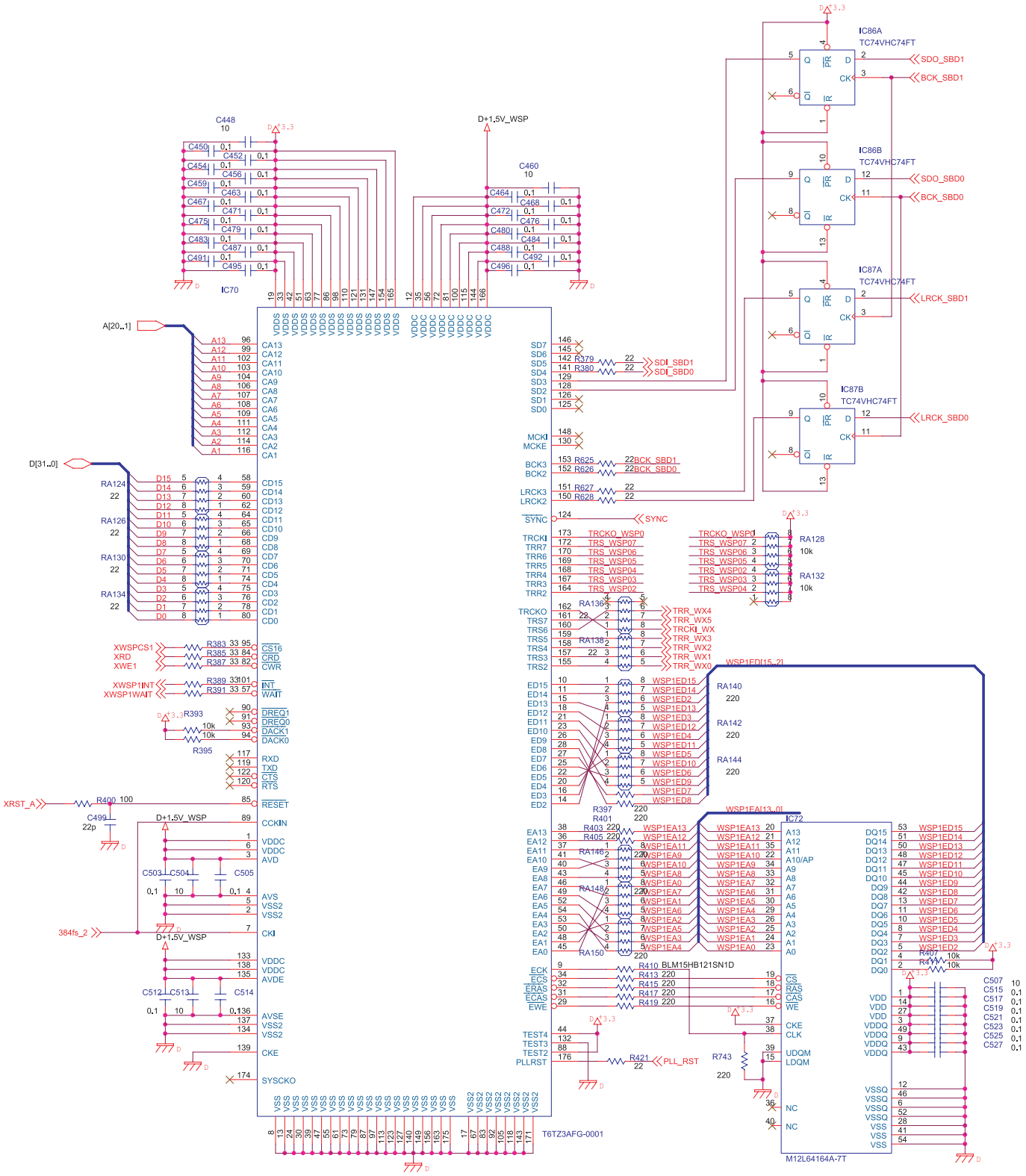
To Inverter board

Circuit Diagram (Main Board: 5/8)

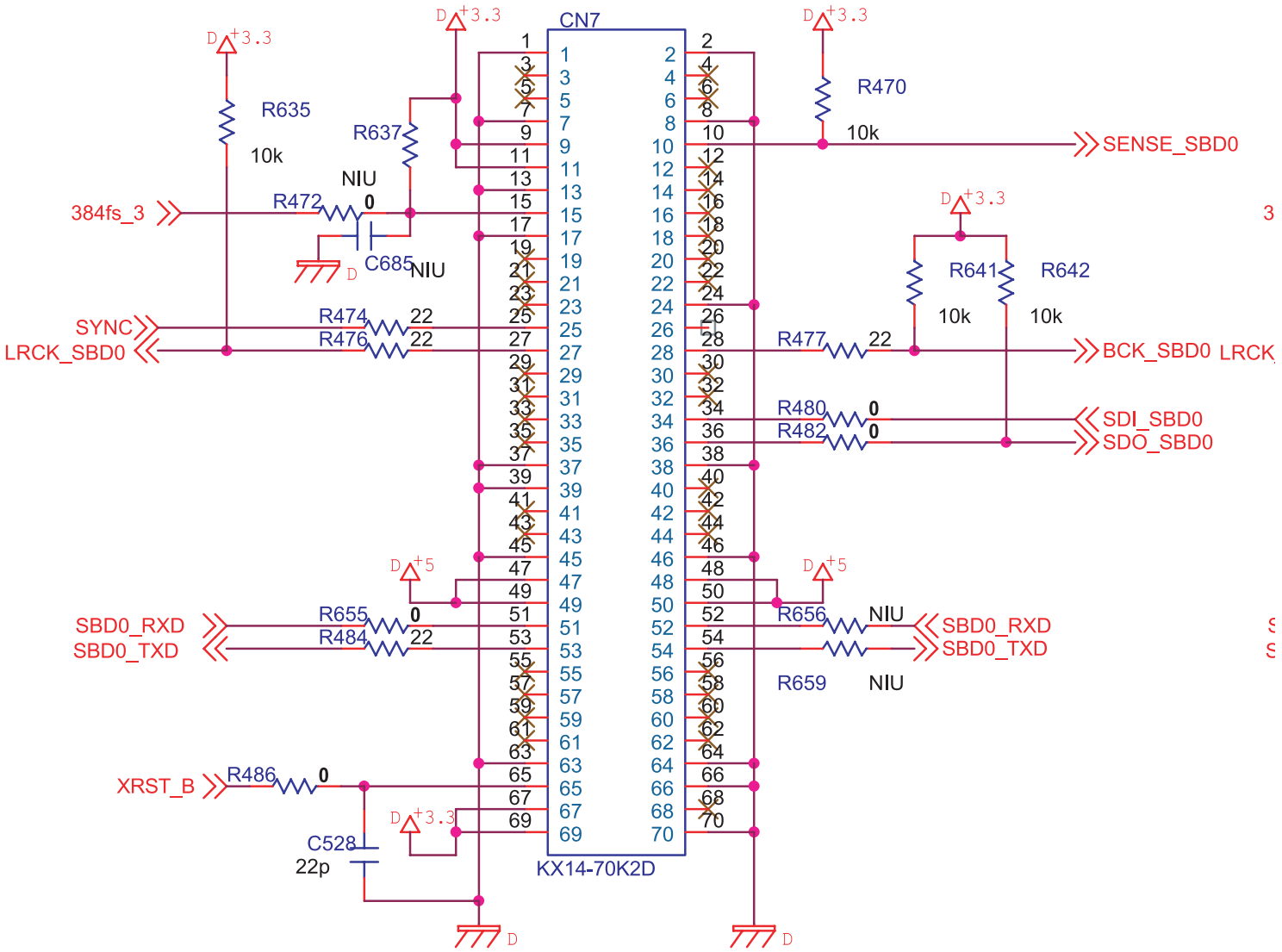


Circuit Diagram (Main Board: 6/8)

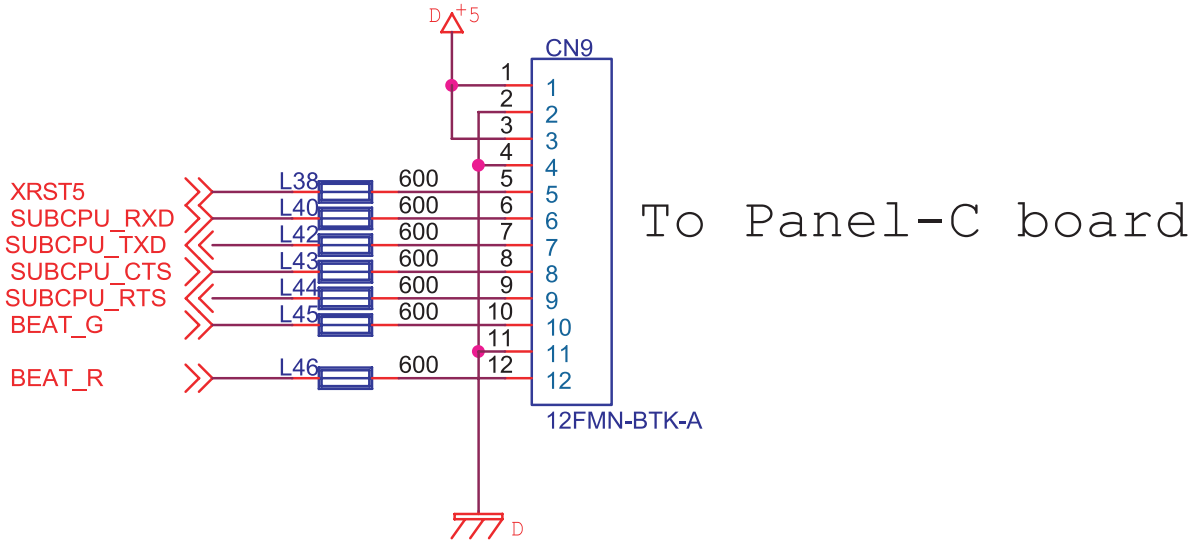



IC70
T6TZ3AFG-0001
IC72
M12L64164A-7T
IC86A
TC74VHC74FT
IC86B
TC74VHC74FT
IC87A
TC74VHC74FT
IC87B
TC74VHC74FT
A[20..1]
D[31..0]
D+1.5V_WSP
SDO_SBD1
BCK_SBD1
SDO_SBD0
BCK_SBD0
LRCK_SBD1
LRCK_SBD0
SDI_SBD1
SDI_SBD0
SYNC
PLL_RST
XRST_A
384fs_2

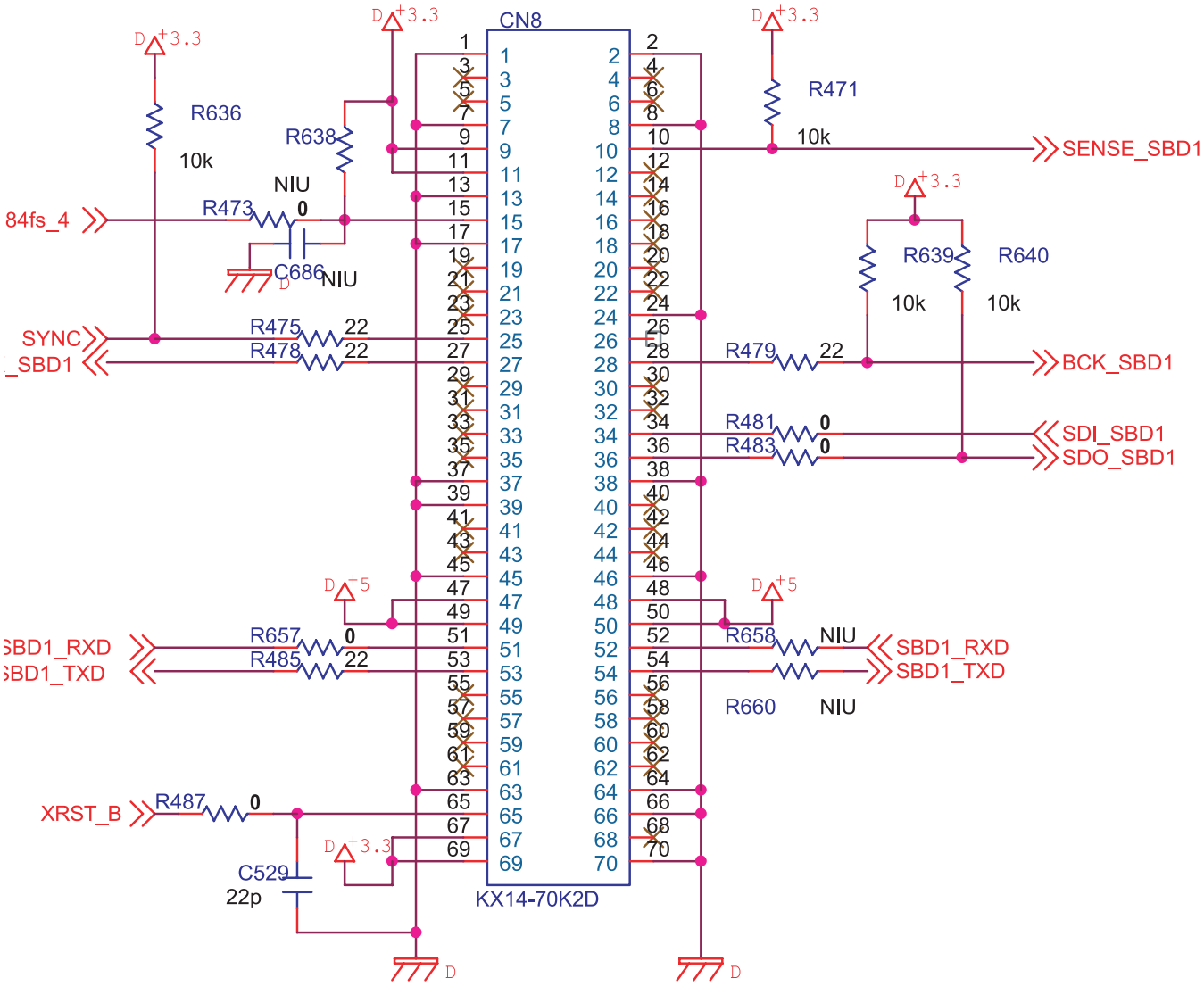
Circuit Diagram (Main Board: 7/8)



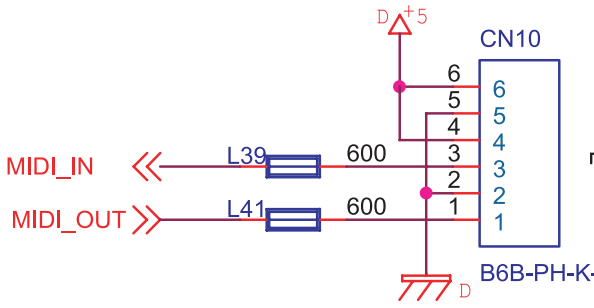
S-Board 0



To Panel-C board

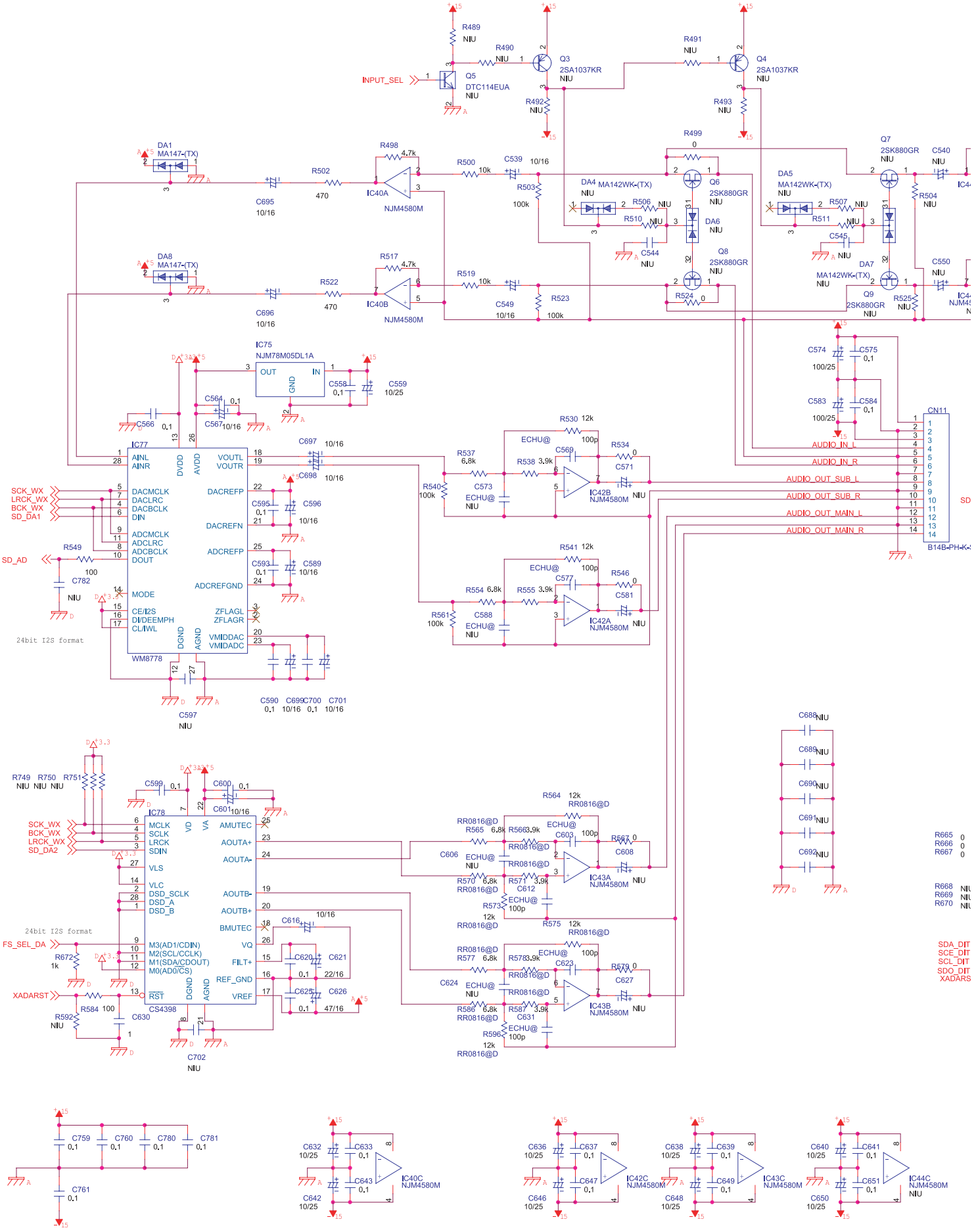


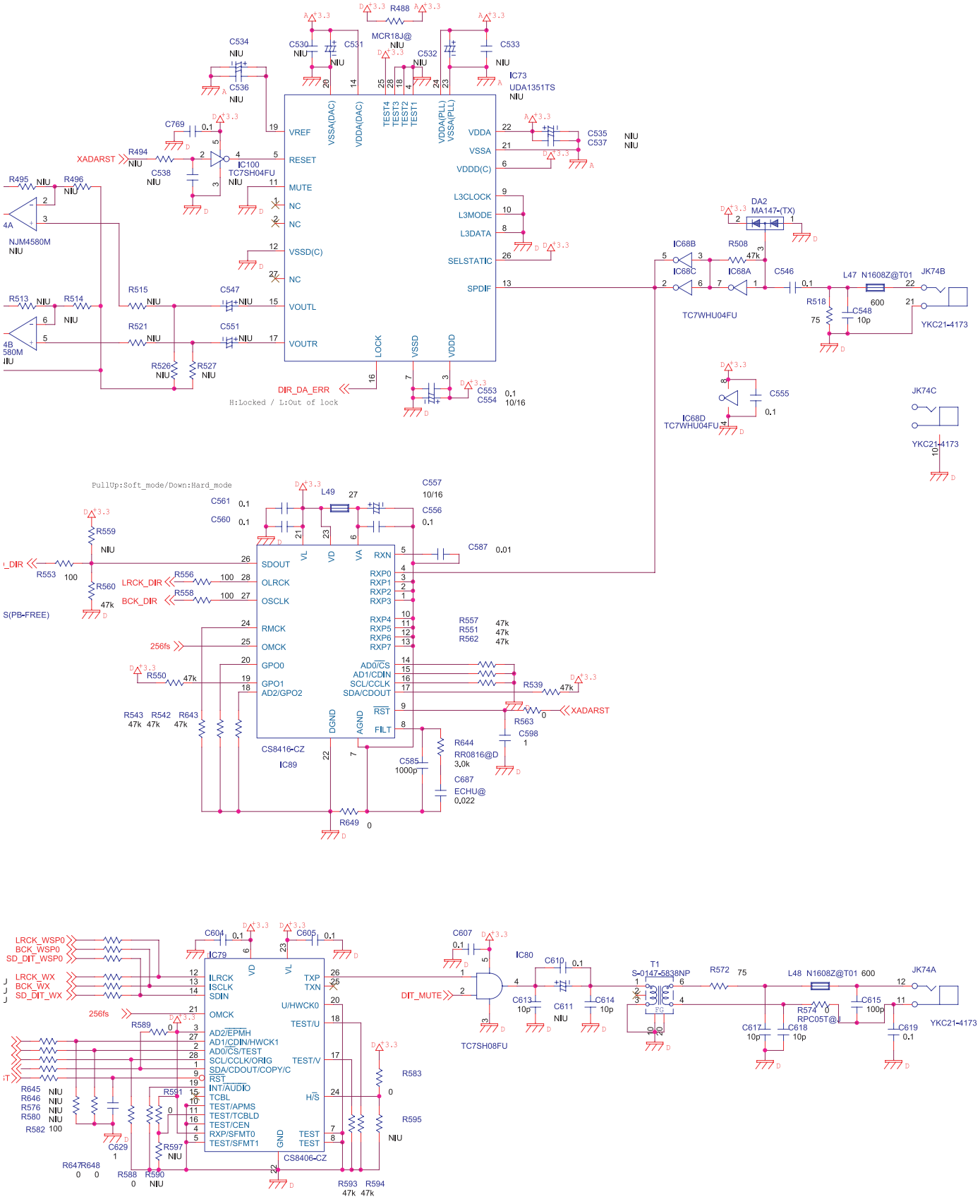
S-Board 1



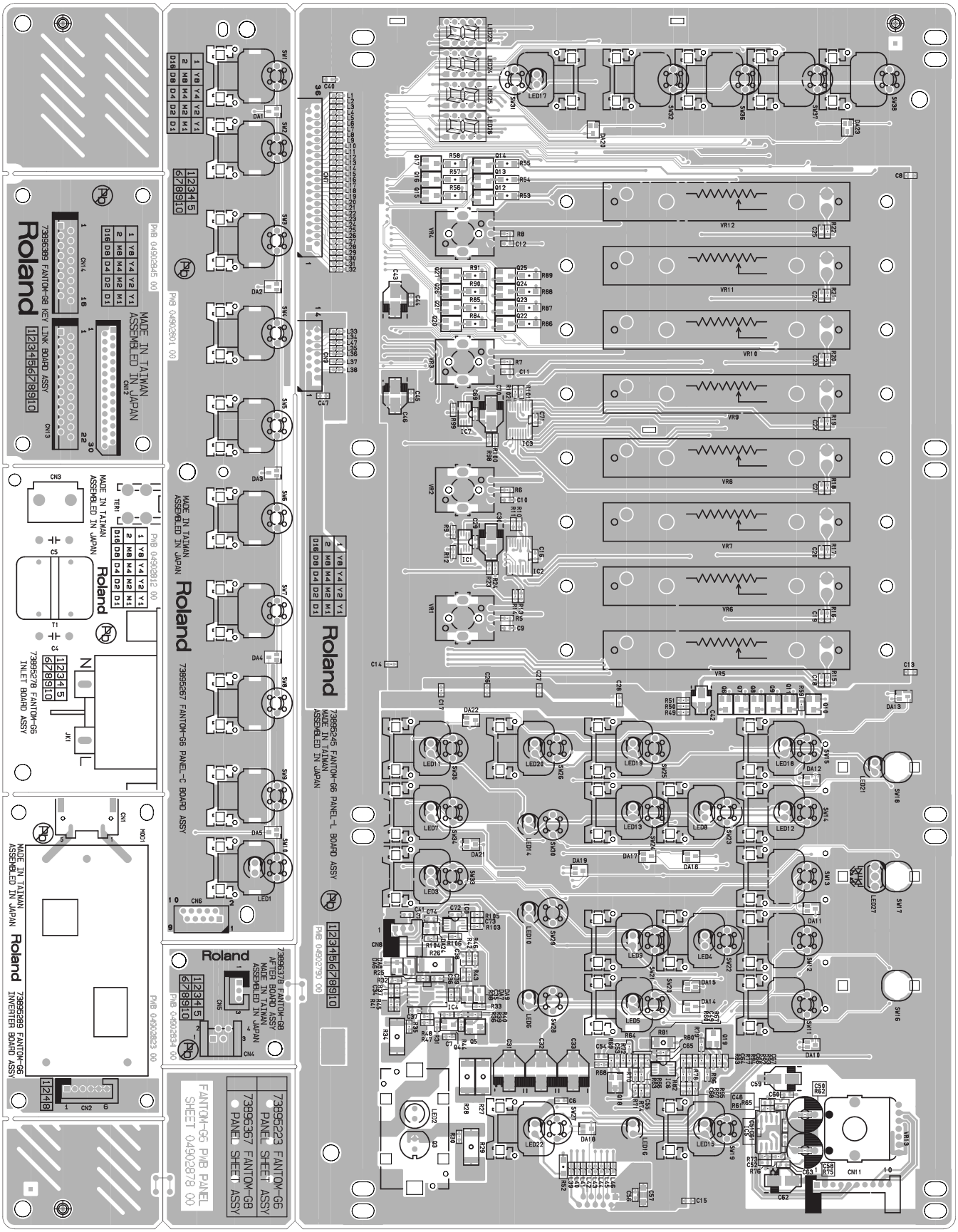
To Jack board

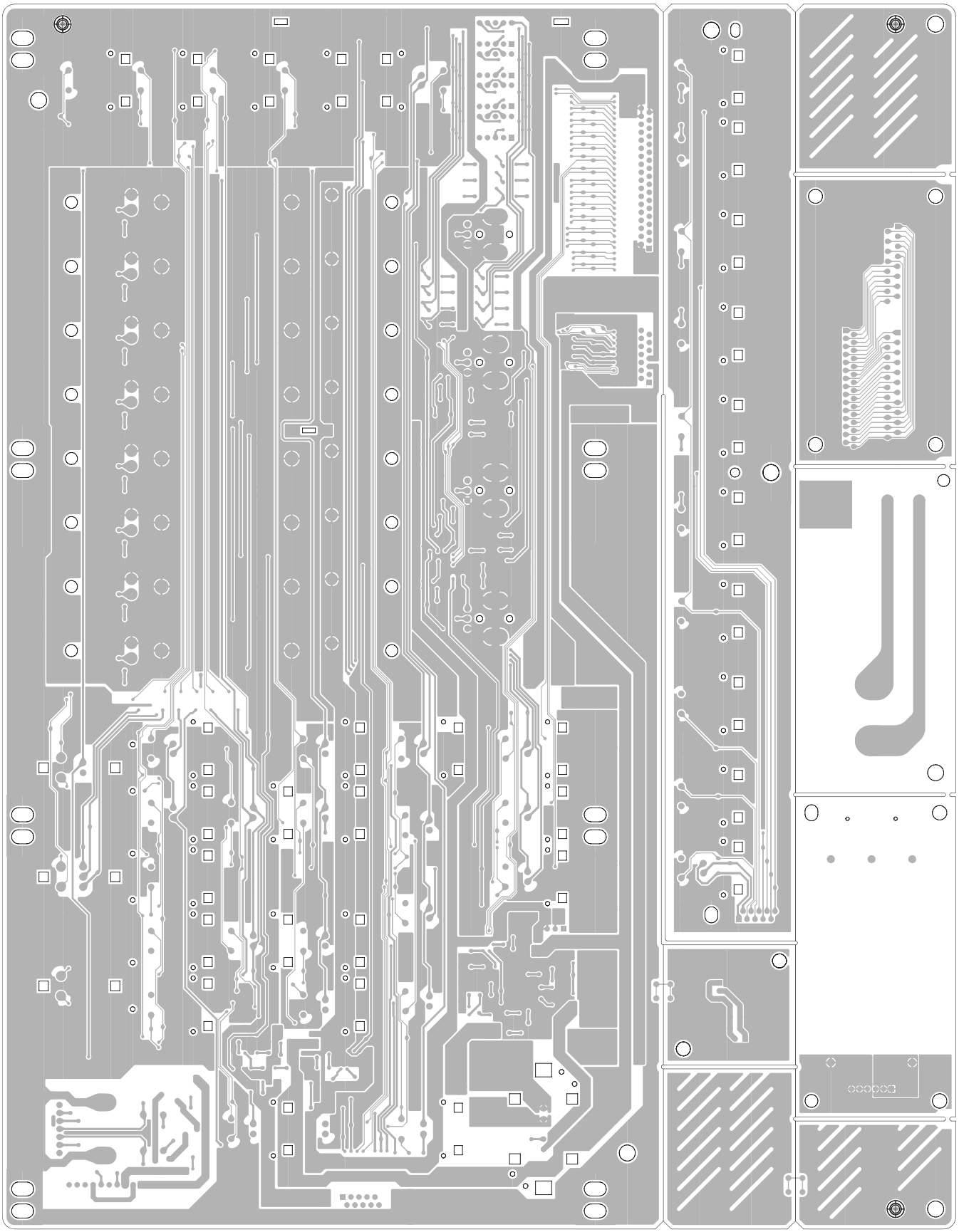
Circuit Diagram (Main Board: 8/8)



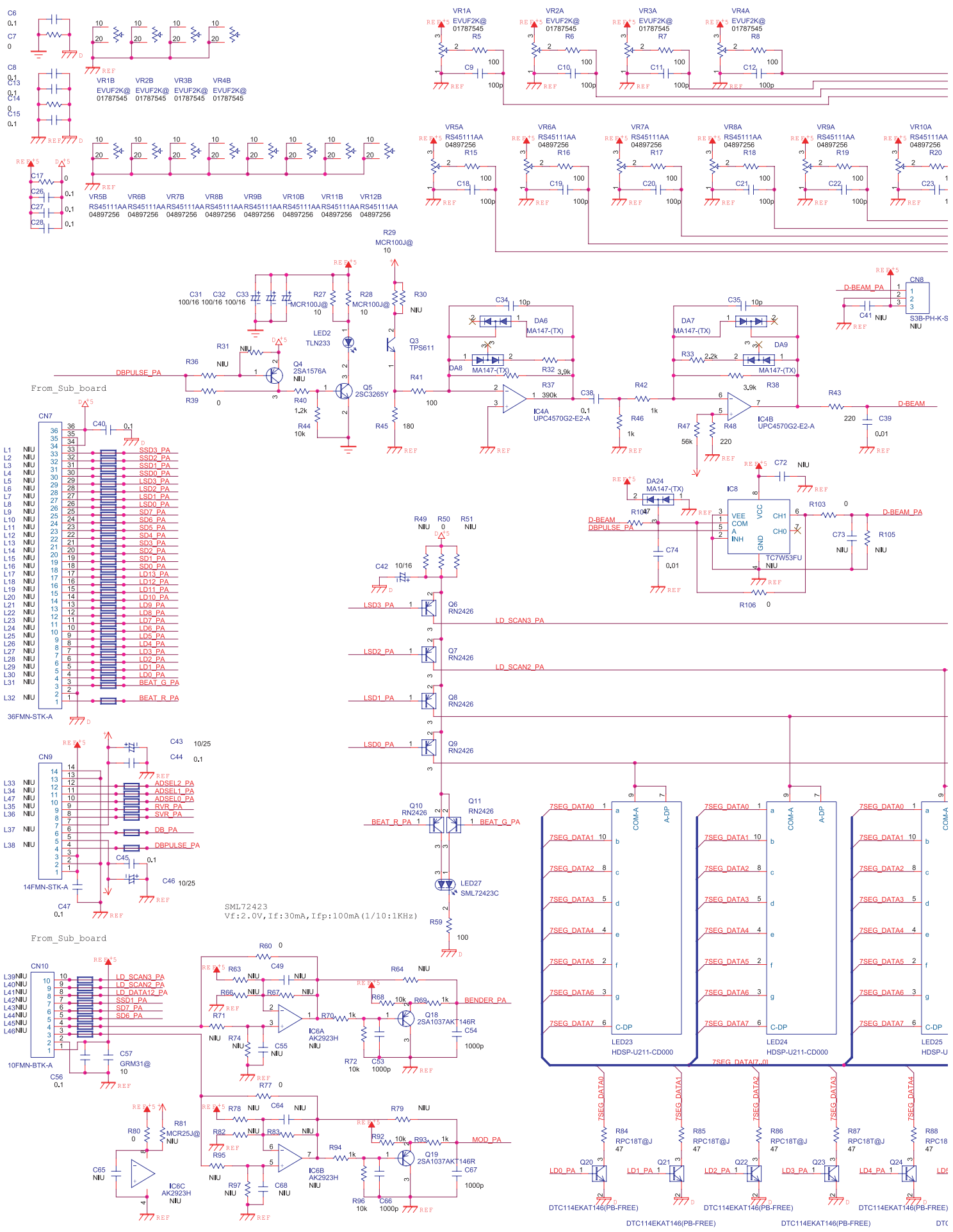

IC73
UDA1351TS
NIU
VREF
VSSA(DAC)
VDDA(DAC)
TEST4
TEST3
TEST2
TEST1
VDDA(PLL)
VSSA(PLL)
VDDA
VSSA
VDDD(C)
L3CLOCK
L3MODE
L3DATA
SELSTATIC
SPDIF
RESET
MUTE
NC
VSSD(C)
VOUTL
VOUTR
LOCK
VSSD
VDDD
IC100
TC7SH04FU
NJM4580M
DA2
MA147-(TX)
IC68B
IC68C
IC68A
IC68D
TC7WHU04FU
L47 N1608Z@T01
JK74B
JK74C
YKC21-4173
DIR_DA_ERR
H:Locked / L:Out of lock
PullUp:Soft_mode/Down:Hard_mode
CS8416-CZ
IC89
SDOUT
OLRCK
OSCLK
RMCK
OMCK
GPO0
GPO1
AD2/GPO2
RXN
RXP0
RXP1
RXP2
RXP3
RXP4
RXP5
RXP6
RXP7
AD0/CS
AD1/CDIN
SCL/CCLK
SDA/CDOUT
RST
FILT
DGND
AGND
VL
VD
VA
LRCK_DIR
BCK_DIR
256fs
XADARST
S(PB-FREE)
CS8406-CZ
ILRCK
ISCLK
SDIN
OMCK
U/HWCK0
TEST/U
TEST/V
H/S
TXP
TXN
AD2/EPMH
AD1/CDIN/HWCK1
AD0/CS/TEST
SCL/CCLK/ORIG
SDA/CDOUT/COPY/C
RST
INT/AUDIO
TCBL
TEST/APMS
TEST/TCBLD
TEST/CEN
RXP/SFMT0
TEST/SFMT1
GND
TEST
DIT_MUTE
TC7SH08FU
IC79
IC80
T1
S-0147-5838NP
L48 N1608Z@T01
JK74A
YKC21-4173
LRCK_WSP0
BCK_WSP0
SD_DIT_WSP0
LRCK_WX
BCK_WX
SD_DIT_WX

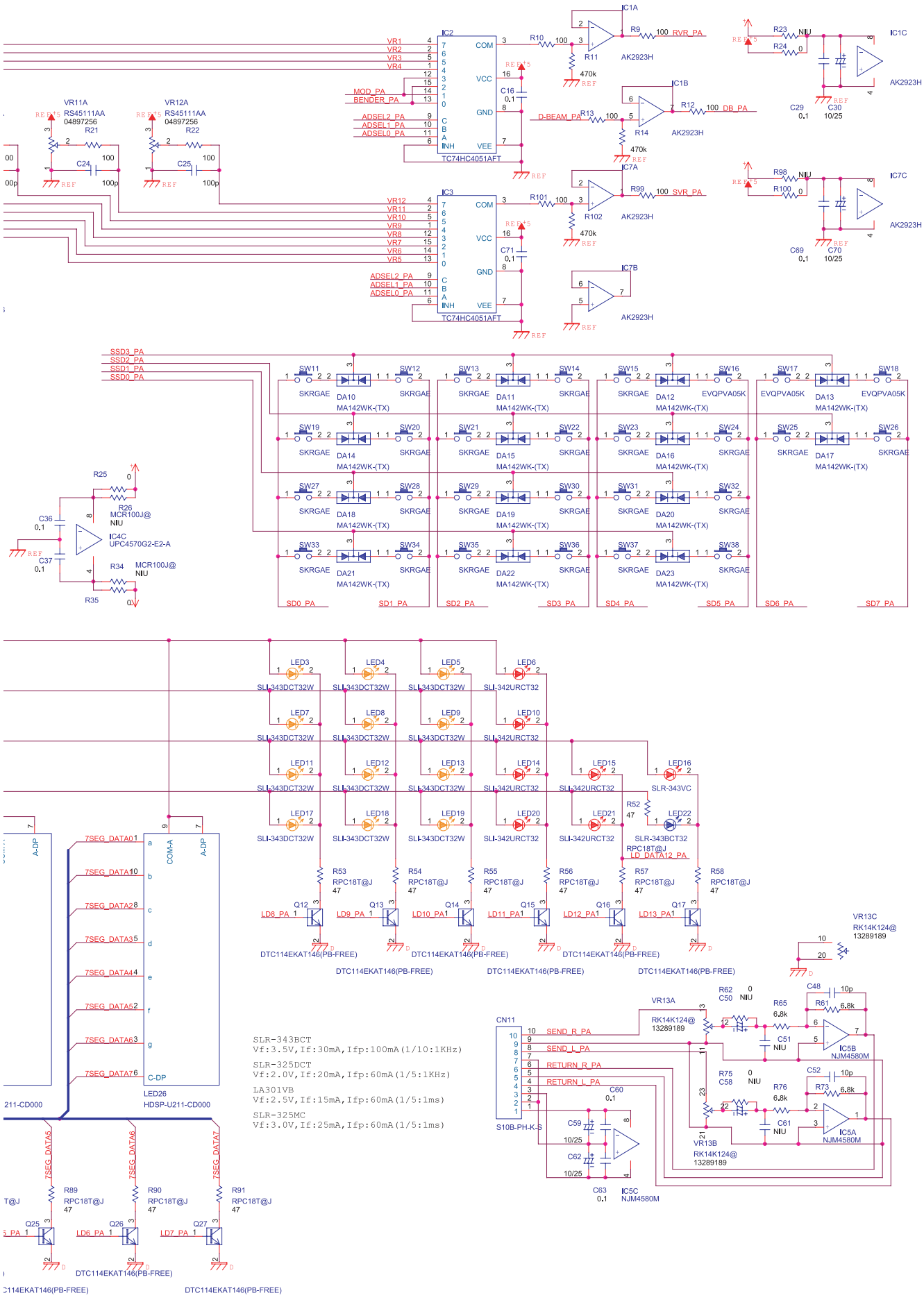
Circuit Board (Panel-L, Panel-C, Inverter, Inlet, After, Key Link Board)


Roland
MADE IN TAIWAN
ASSEMBLED IN JAPAN
73895388 FANTOM-G8 KEY LINK BOARD ASSY
73895267 FANTOM-G6 PANEL-C BOARD ASSY
73895245 FANTOM-G6 PANEL-L BOARD ASSY
73895278 FANTOM-G6 INLET BOARD ASSY
73896378 FANTOM-G8 AFTER BOARD ASSY
73895289 FANTOM-G6 INVERTER BOARD ASSY
73895223 FANTOM-G6 PANEL SHEET ASSY
73896367 FANTOM-G8 PANEL SHEET ASSY
FANTOM-G6 PWB PANEL SHEET 04902878 00

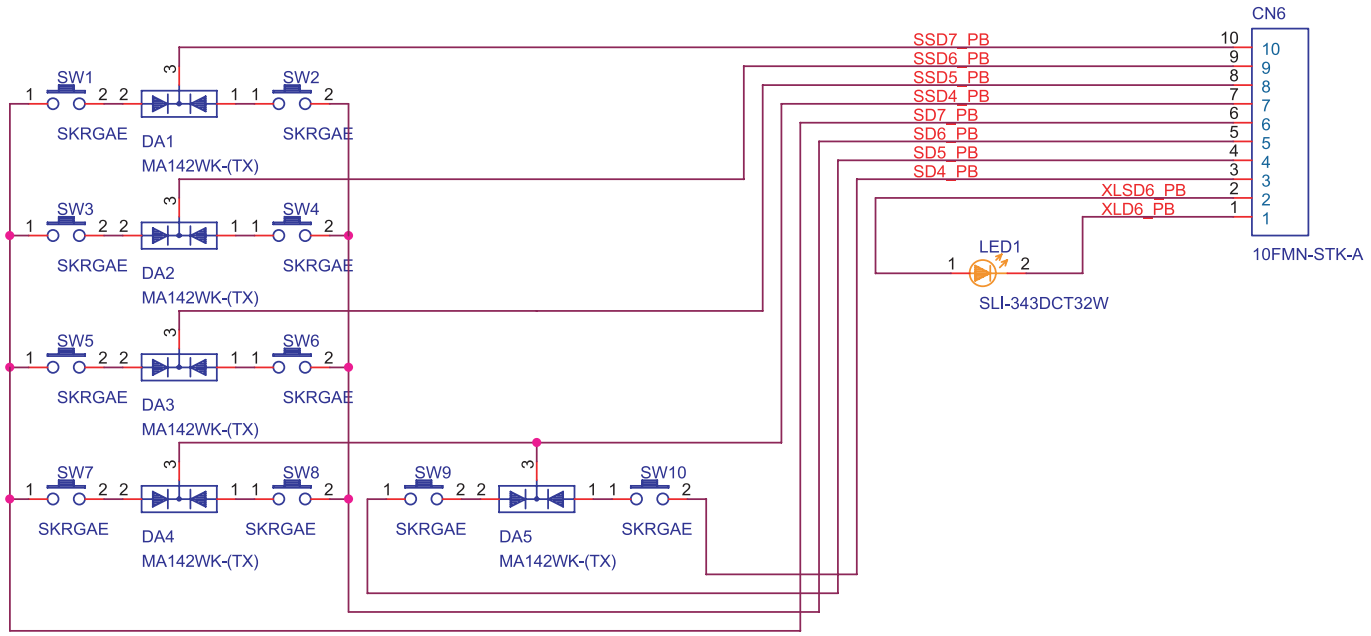


Circuit Diagram (Panel-L Board)

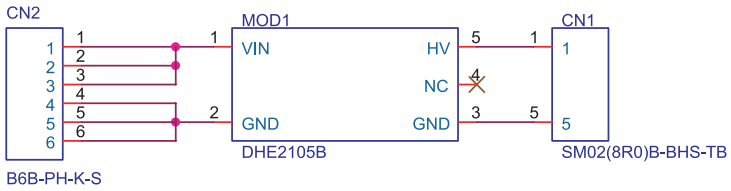



IC1A
IC1B
IC1C
IC2
IC3
IC7A
IC7B
IC7C
AK2923H
TC74HC4051AFT
VR11A
VR12A
RS45111AA
04897256
R9 100 RVR_PA
R10 100
R11 470k
R12 100 DB_PA
R13 100
R14 470k
R99 100 SVR_PA
R101 100
R102 470k
D-BEAM_PA
MOD_PA
BENDER_PA
ADSEL2_PA
ADSEL1_PA
ADSEL0_PA
SSD3_PA
SSD2_PA
SSD1_PA
SSD0_PA
SKRGAE
MA142WK-(TX)
EVQPVA05K
IC4C
UPC4570G2-E2-A
MCR100J@
NIU
SD0_PA
SD1_PA
SD2_PA
SD3_PA
SD4_PA
SD5_PA
SD6_PA
SD7_PA
LED3
LED4
LED5
LED6
LED7
LED8
LED9
LED10
LED11
LED12
LED13
LED14
LED15
LED16
LED17
LED18
LED19
LED20
LED21
LED22
SLI-343DCT32W
SLI-342URCT32
SLR-343VC
SLR-343BCT32
RPC18T@J
LD_DATA12_PA
DTC114EKAT146(PB-FREE)
VR13C
RK14K124@
13289189
VR13A
VR13B
IC5A
IC5B
IC5C
NJM4580M
CN11
S10B-PH-K-S
SEND_R_PA
SEND_L_PA
RETURN_R_PA
RETURN_L_PA
7SEG_DATA01
7SEG_DATA10
7SEG_DATA28
7SEG_DATA35
7SEG_DATA44
7SEG_DATA52
7SEG_DATA63
7SEG_DATA76
A-DP
COM-A
C-DP
LED26
HDSP-U211-CD000
SLR-343BCT
Vf:3.5V,If:30mA,Ifp:100mA(1/10:1KHz)
SLR-325DCT
Vf:2.0V,If:20mA,Ifp:60mA(1/5:1KHz)
LA301VB
Vf:2.5V,If:15mA,Ifp:60mA(1/5:1ms)
SLR-325MC
Vf:3.0V,If:25mA,Ifp:60mA(1/5:1ms)

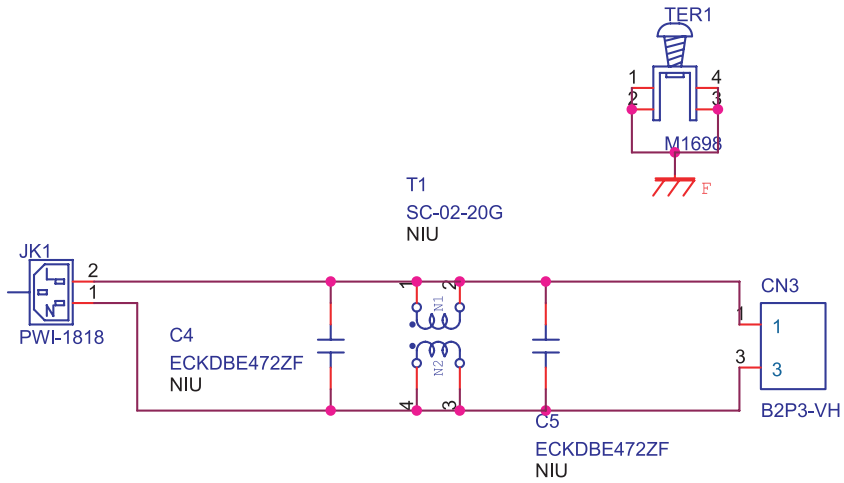
Circuit Diagram (Panel-C Board)



Circuit Diagram (Inverter Board)

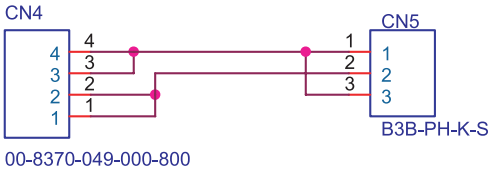


Circuit Diagram (Inlet Board)



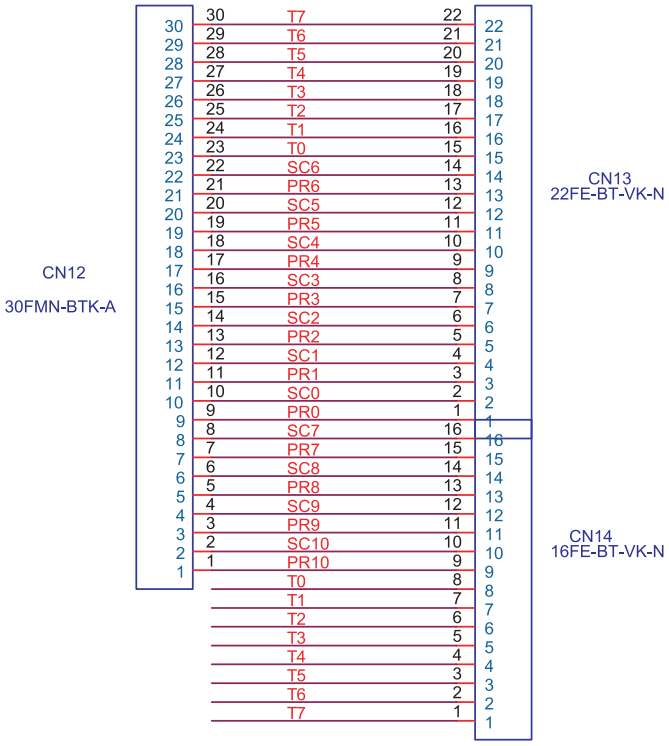
Circuit Diagram (After Board) (only for Fantom-G8)

Fantom-G8
only

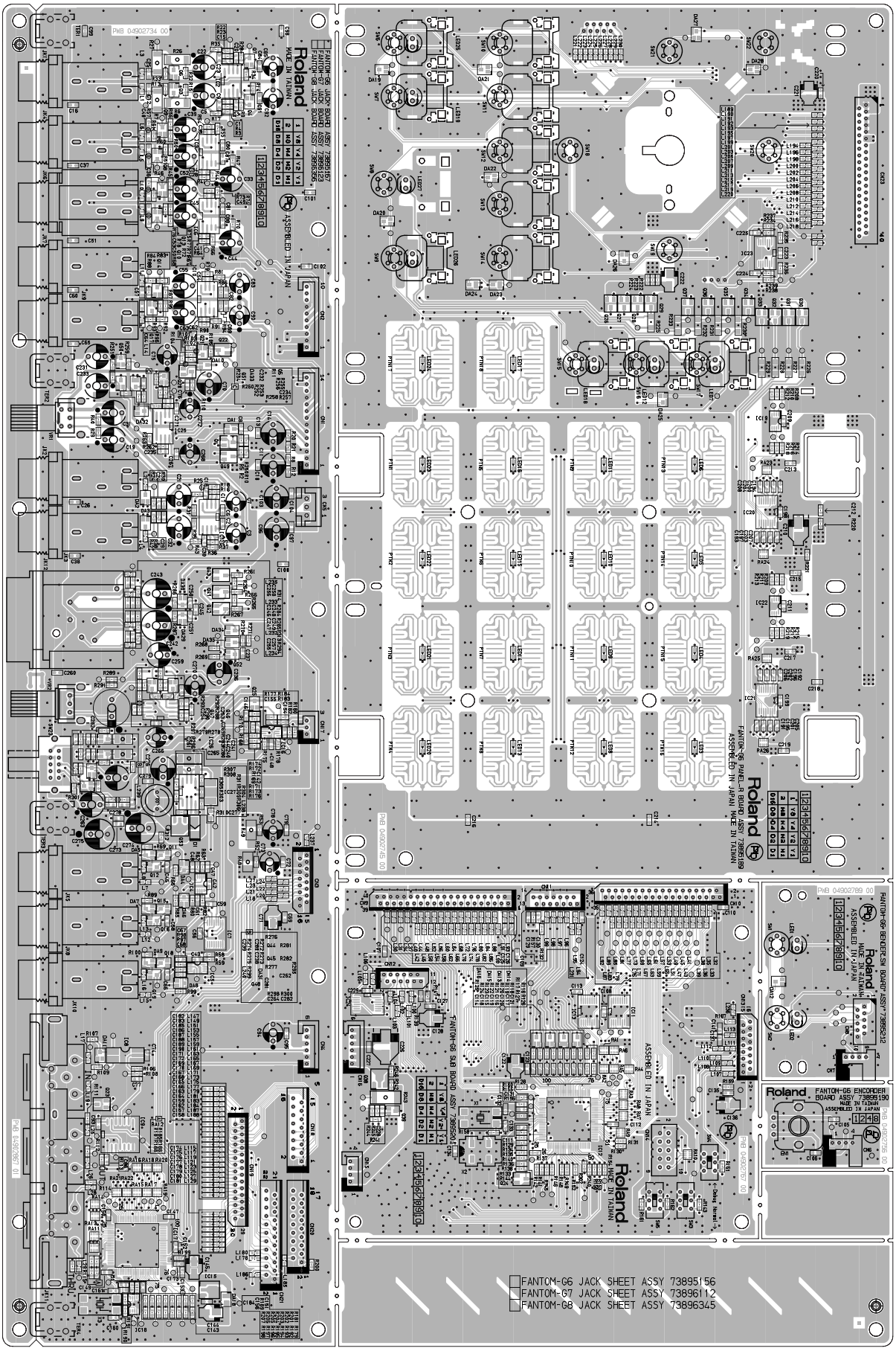


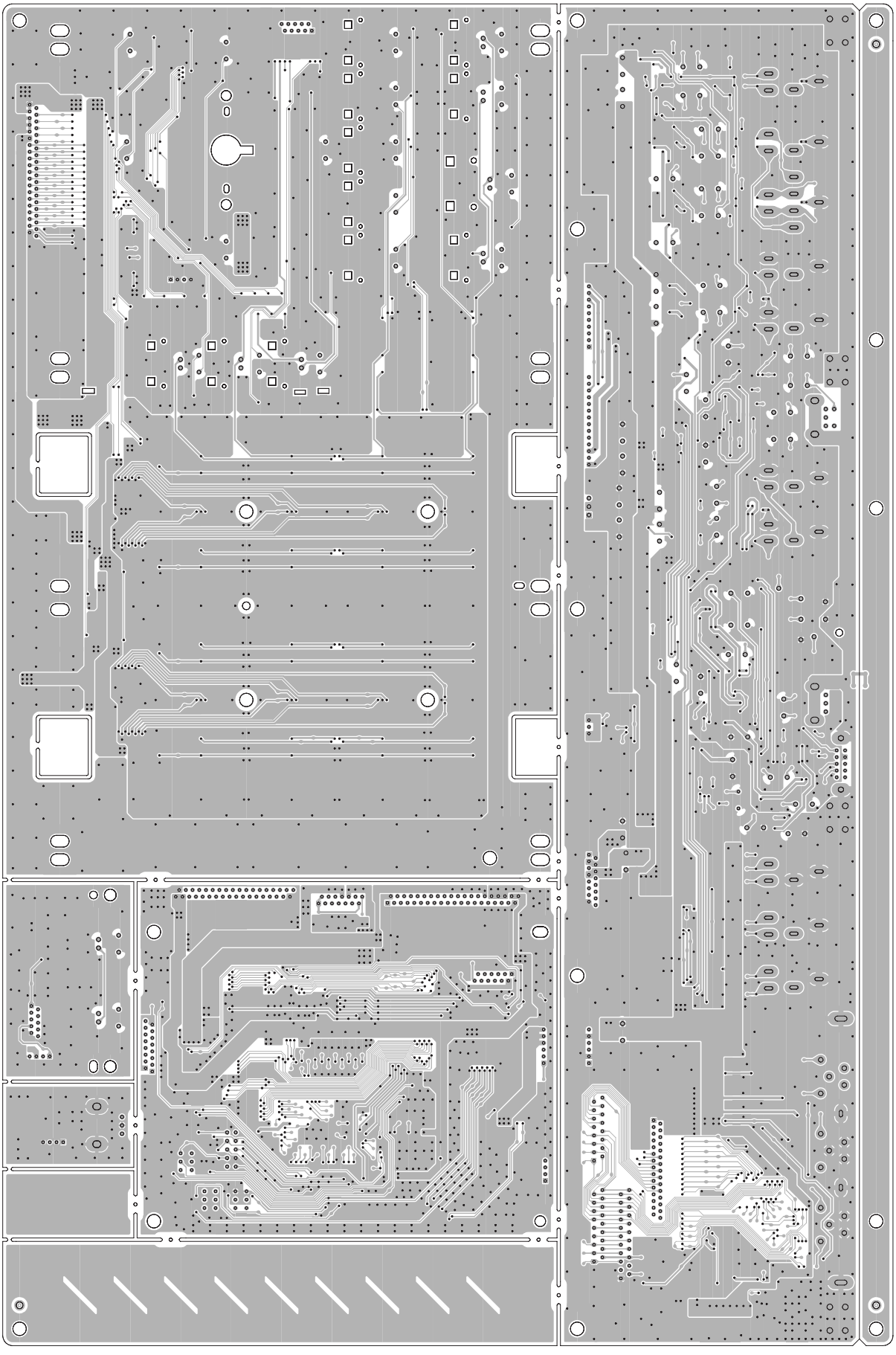
Circuit Diagram (Key Link Board) (only for Fantom-G8)

Fantom-G8
Only

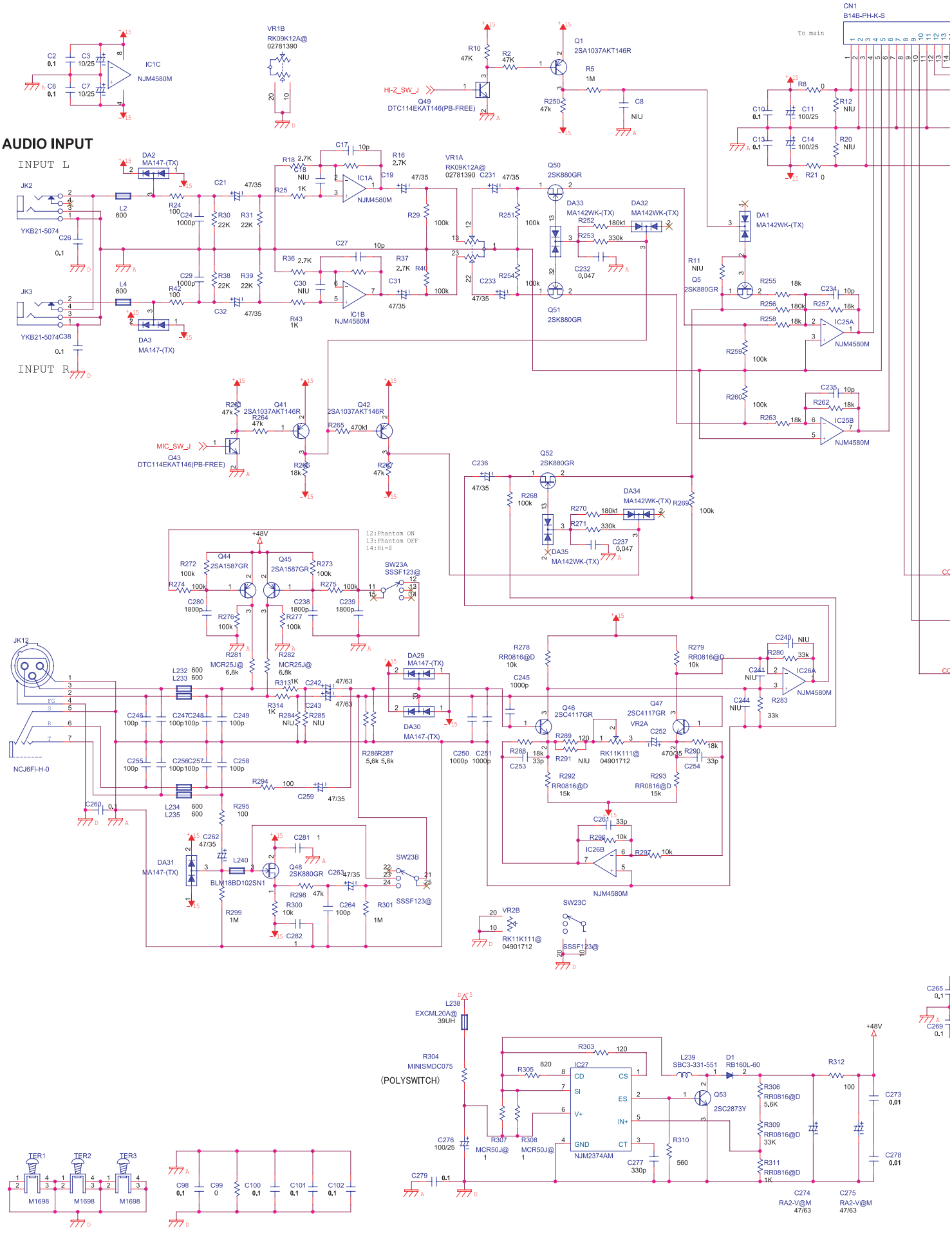


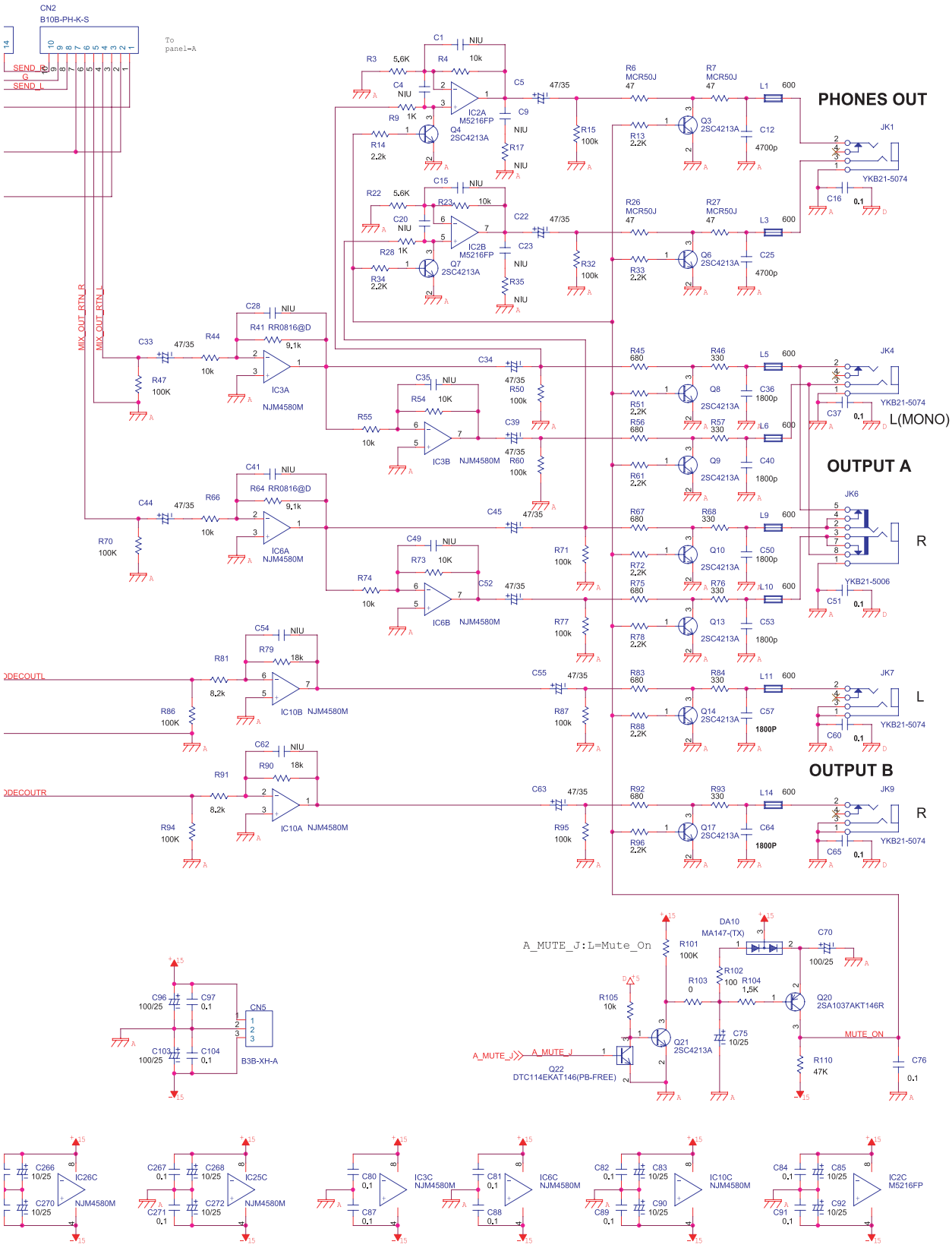
Circuit Board (Jack, Panel-R, Sub CPU, Bender SW, Encoder Board)



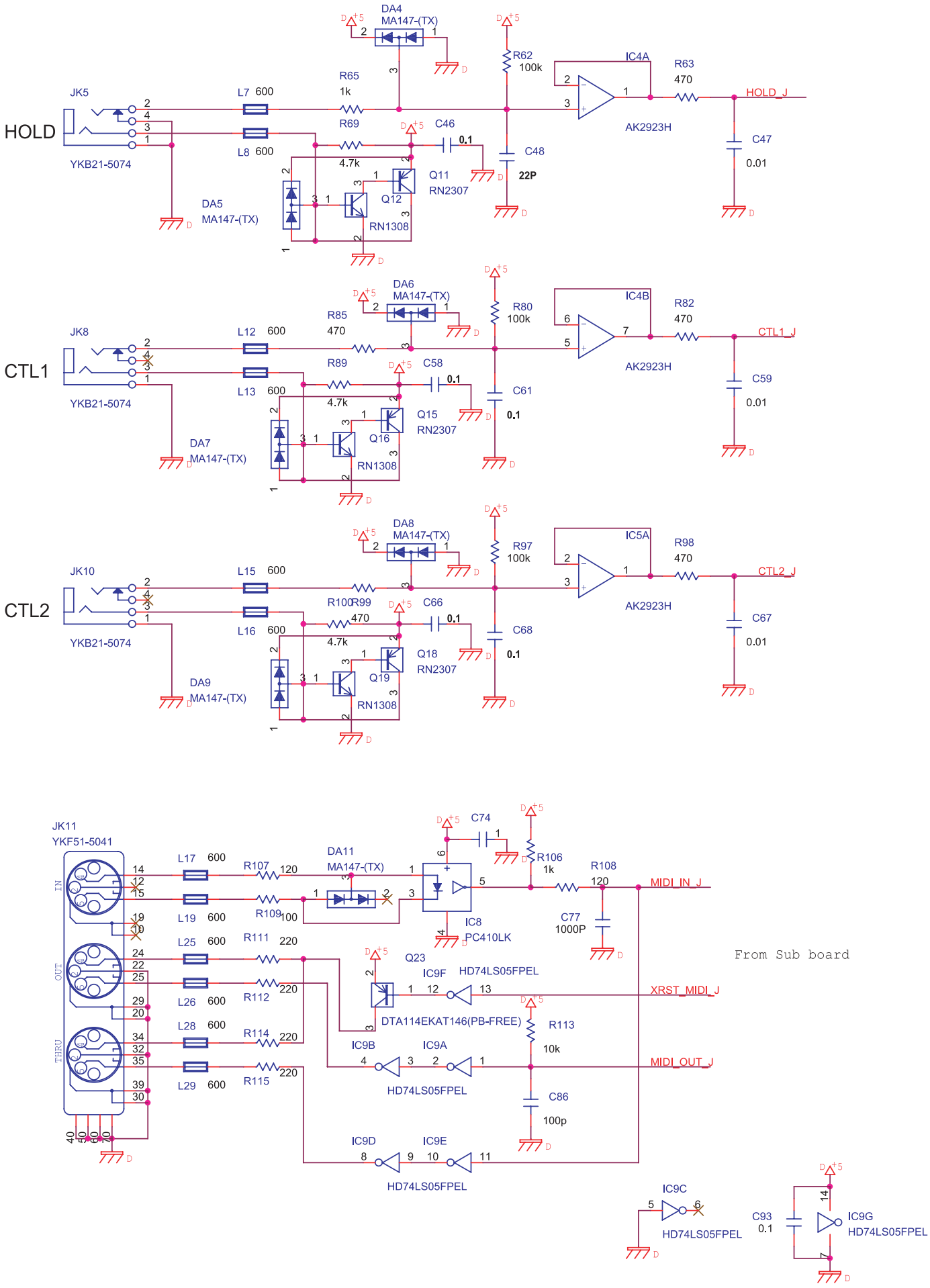


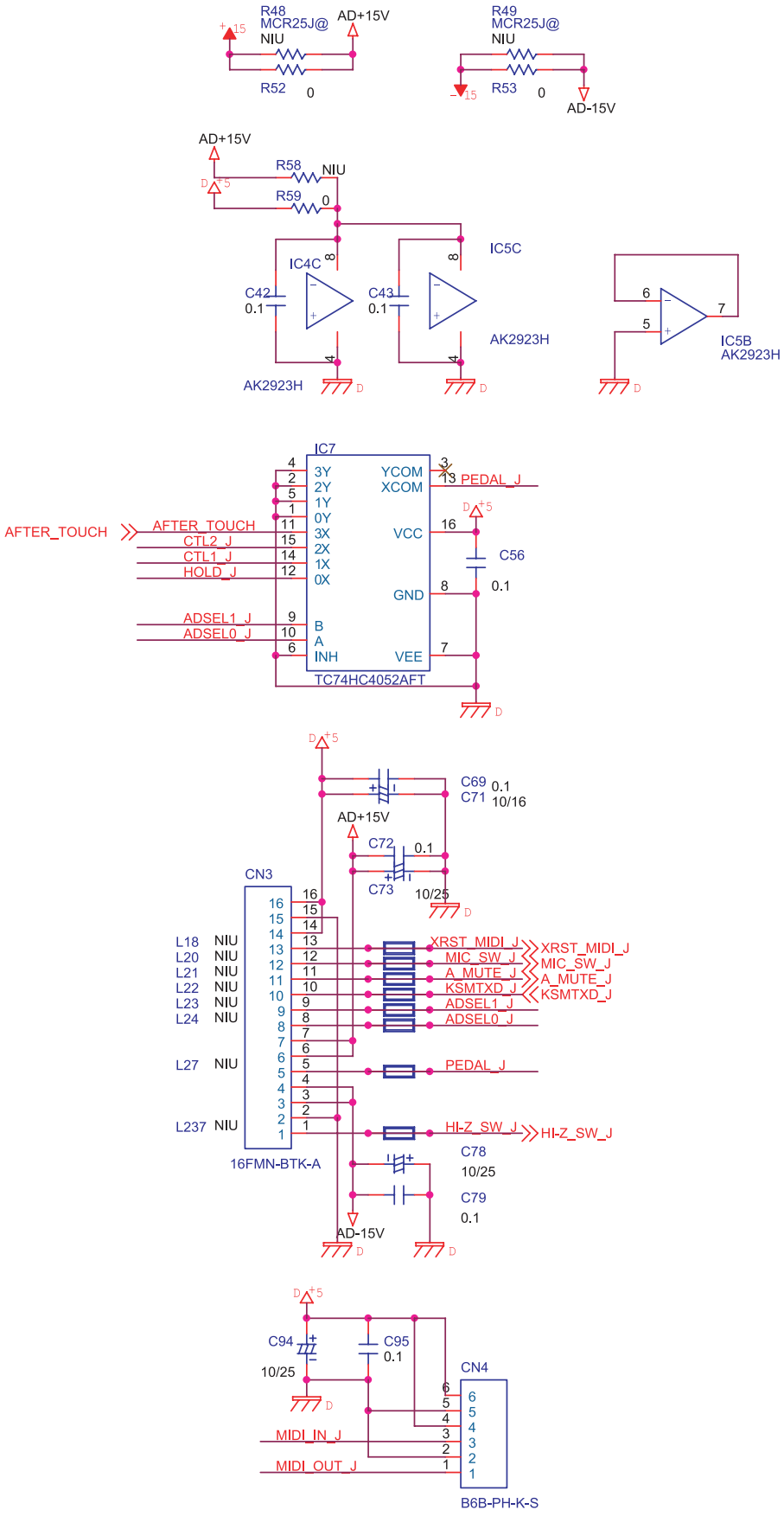
Circuit Diagram (Jack Board: 1/3)




CN2
B10B-PH-K-S
To panel-A
SEND_R
G
SEND_L
MIX_OUT_RTN_R
MIX_OUT_RTN_L
PHONES OUT
JK1
YKB21-5074
OUTPUT A
L(MONO)
JK4
R
JK6
YKB21-5006
L
JK7
OUTPUT B
JK9
IC2A M5216FP
IC2B M5216FP
IC3A NJM4580M
IC3B NJM4580M
IC6A NJM4580M
IC6B NJM4580M
IC10B NJM4580M
IC10A NJM4580M
Q3 2SC4213A
Q4 2SC4213A
Q6 2SC4213A
Q7 2SC4213A
Q8 2SC4213A
Q9 2SC4213A
Q10 2SC4213A
Q13 2SC4213A
Q14 2SC4213A
Q17 2SC4213A
A_MUTE_J:L=Mute_On
DA10
MA147-(TX)
Q20 2SA1037AKT146R
Q21 2SC4213A
Q22 DTC114EKAT146(PB-FREE)
MUTE_ON
CN5
B3B-XH-A
IC26C NJM4580M
IC25C NJM4580M
IC3C NJM4580M
IC6C NJM4580M
IC10C NJM4580M
IC2C M5216FP

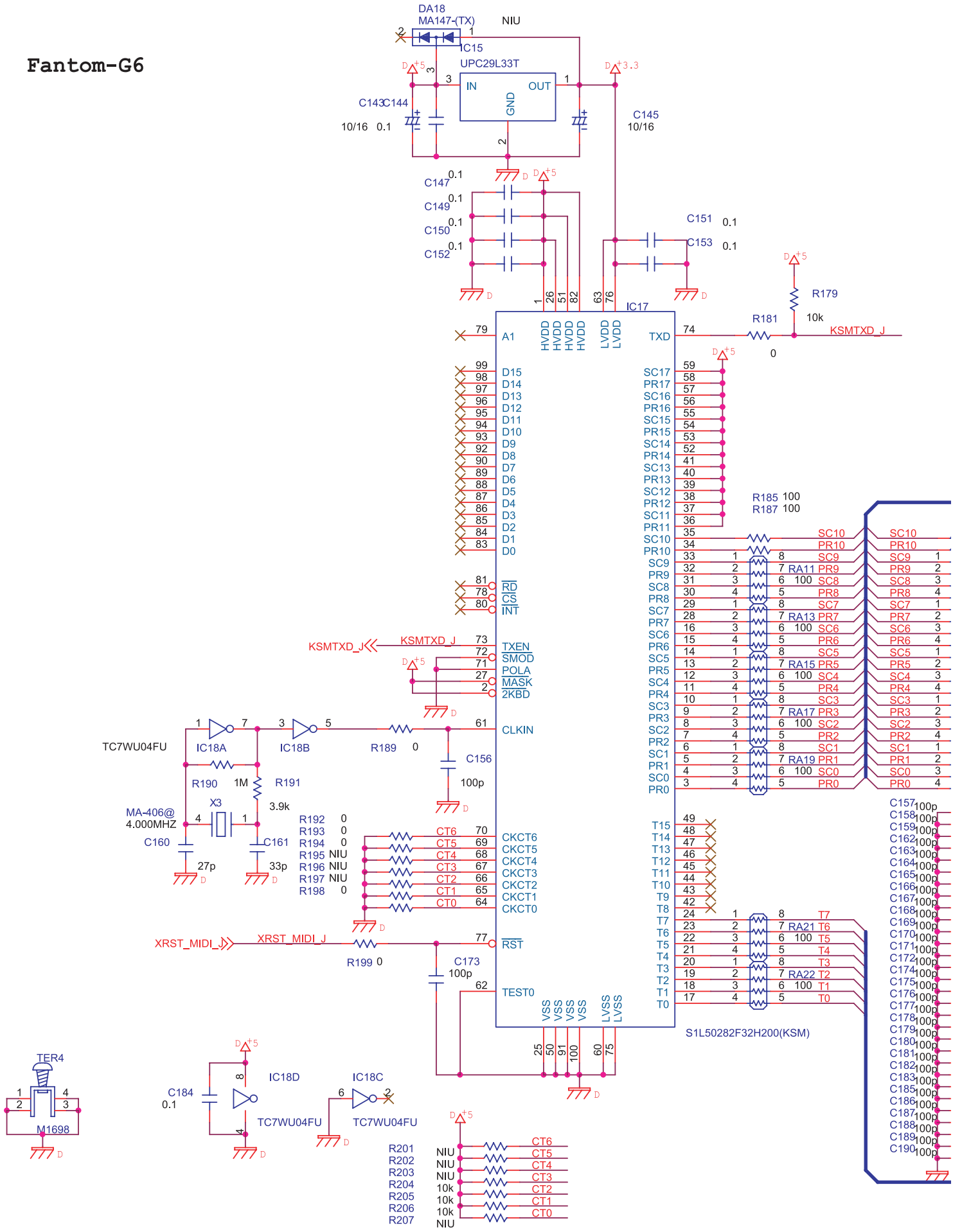
Circuit Diagram (Jack Board: 2/3)

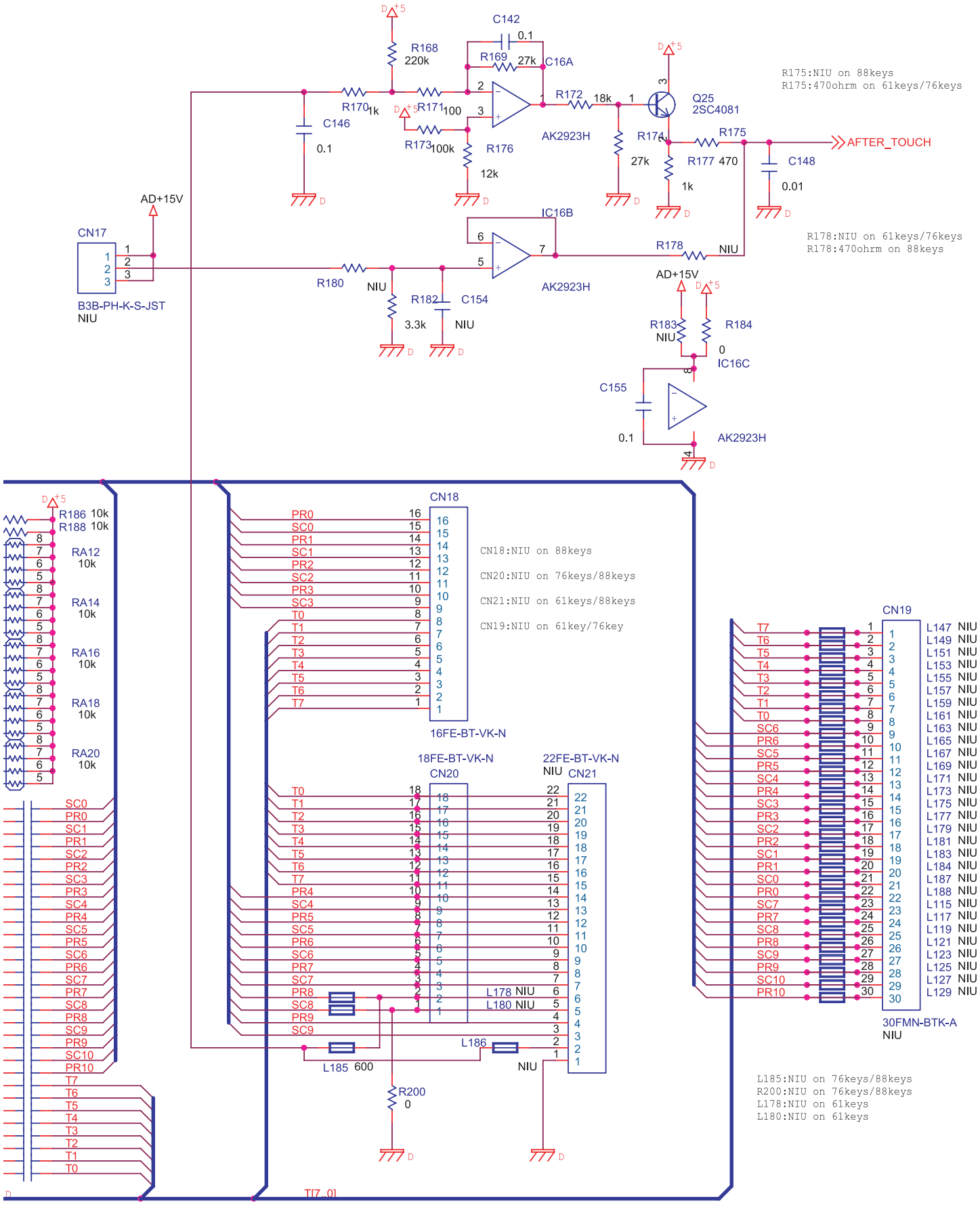



R48
MCR25J@
NIU
AD+15V
R52
0
R49
MCR25J@
NIU
R53
0
AD-15V
R58
NIU
R59
0
IC4C
IC5C
C42
0.1
C43
0.1
AK2923H
IC5B
AK2923H
IC7
AFTER_TOUCH
CTL2_J
CTL1_J
HOLD_J
ADSEL1_J
ADSEL0_J
PEDAL_J
C56
0.1
TC74HC4052AFT
C69
C71
0.1
10/16
C72
0.1
C73
10/25
CN3
16FMN-BTK-A
L18 NIU
L20 NIU
L21 NIU
L22 NIU
L23 NIU
L24 NIU
L27 NIU
L237 NIU
XRST_MIDI_J
MIC_SW_J
A_MUTE_J
KSMTXD_J
HI-Z_SW_J
C78
10/25
C79
0.1
C94
10/25
C95
0.1
CN4
MIDI_IN_J
MIDI_OUT_J
B6B-PH-K-S

Circuit Diagram (Fantom-G6 Jack Board: 3/3)

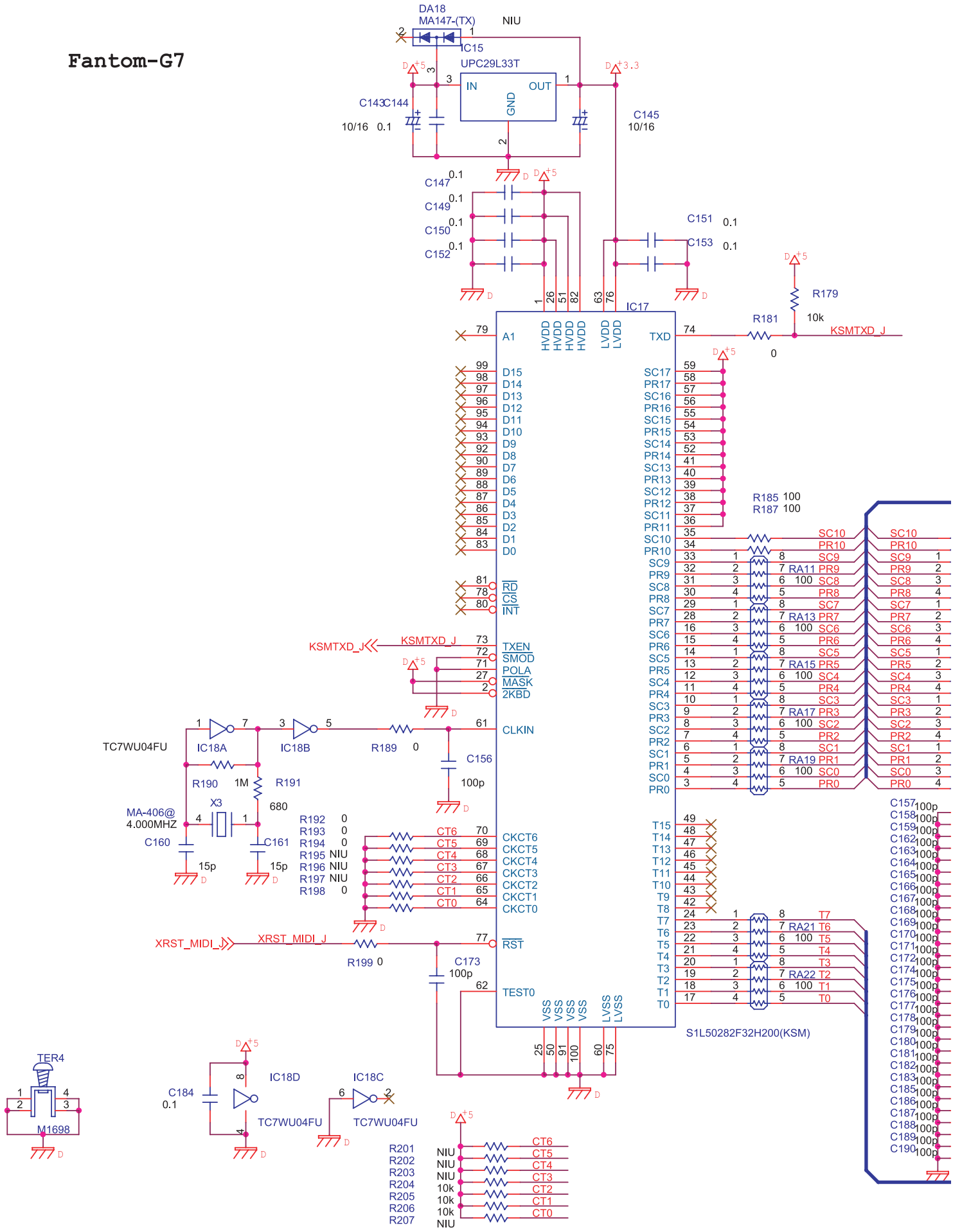
Fantom-G6

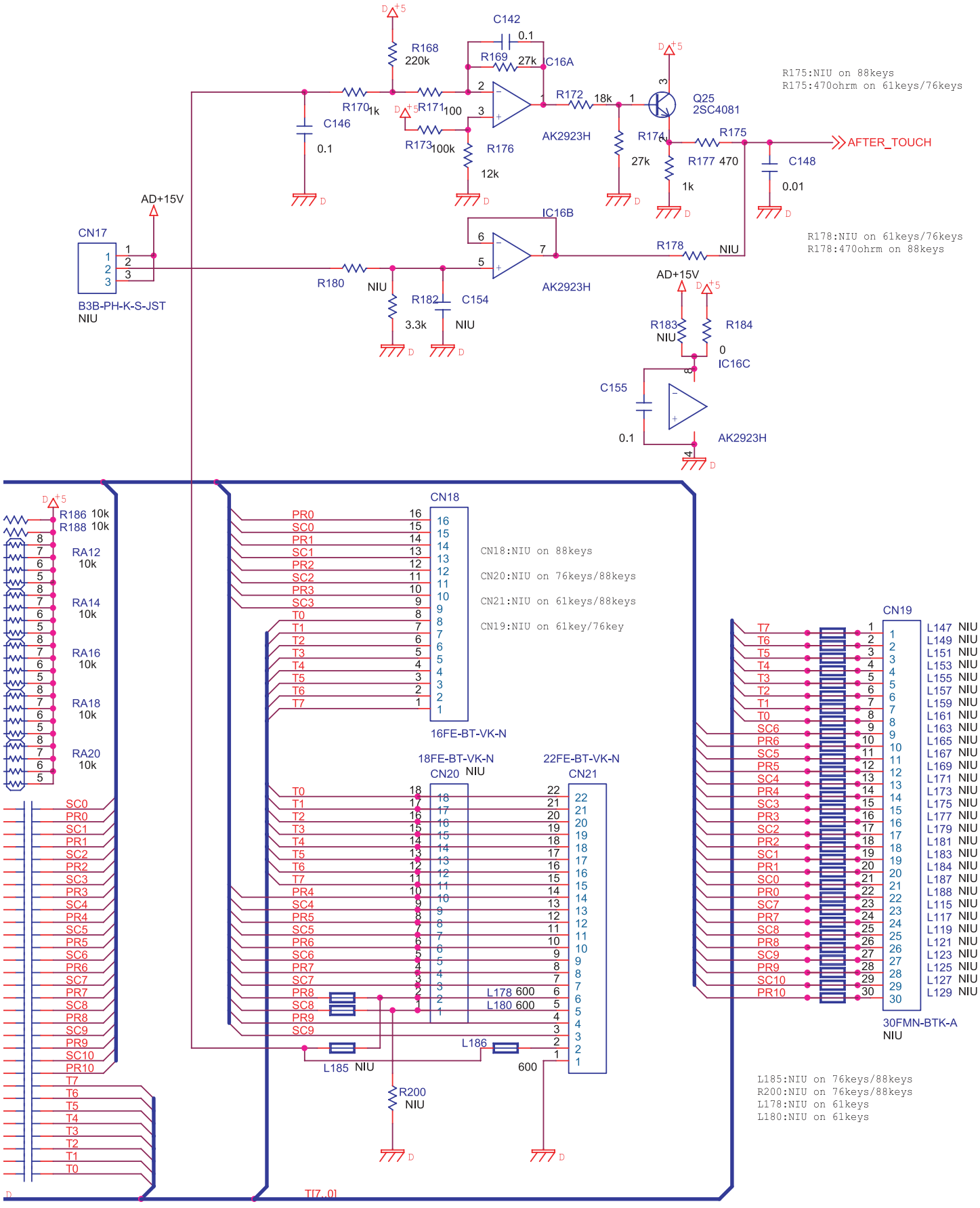



R175:NIU on 88keys
R175:470ohrm on 61keys/76keys
R178:NIU on 61keys/76keys
R178:470ohrm on 88keys
CN18:NIU on 88keys
CN20:NIU on 76keys/88keys
CN21:NIU on 61keys/88keys
CN19:NIU on 61key/76key
L185:NIU on 76keys/88keys
R200:NIU on 76keys/88keys
L178:NIU on 61keys
L180:NIU on 61keys
AFTER_TOUCH
AK2923H
B3B-PH-K-S-JST
16FE-BT-VK-N
18FE-BT-VK-N
22FE-BT-VK-N
30FMN-BTK-A

Circuit Diagram (Fantom-G7 Jack Board: 3/3)

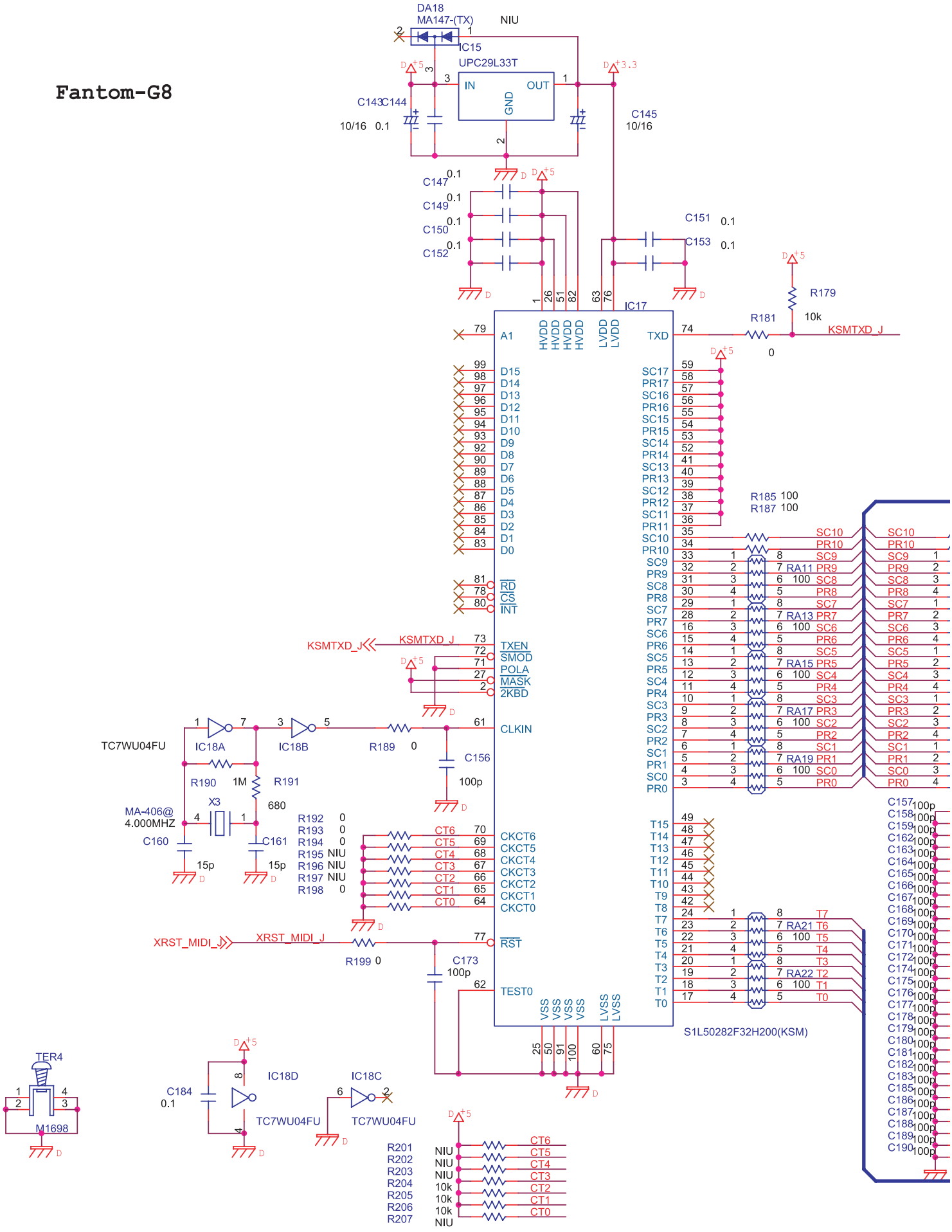
Fantom-G7

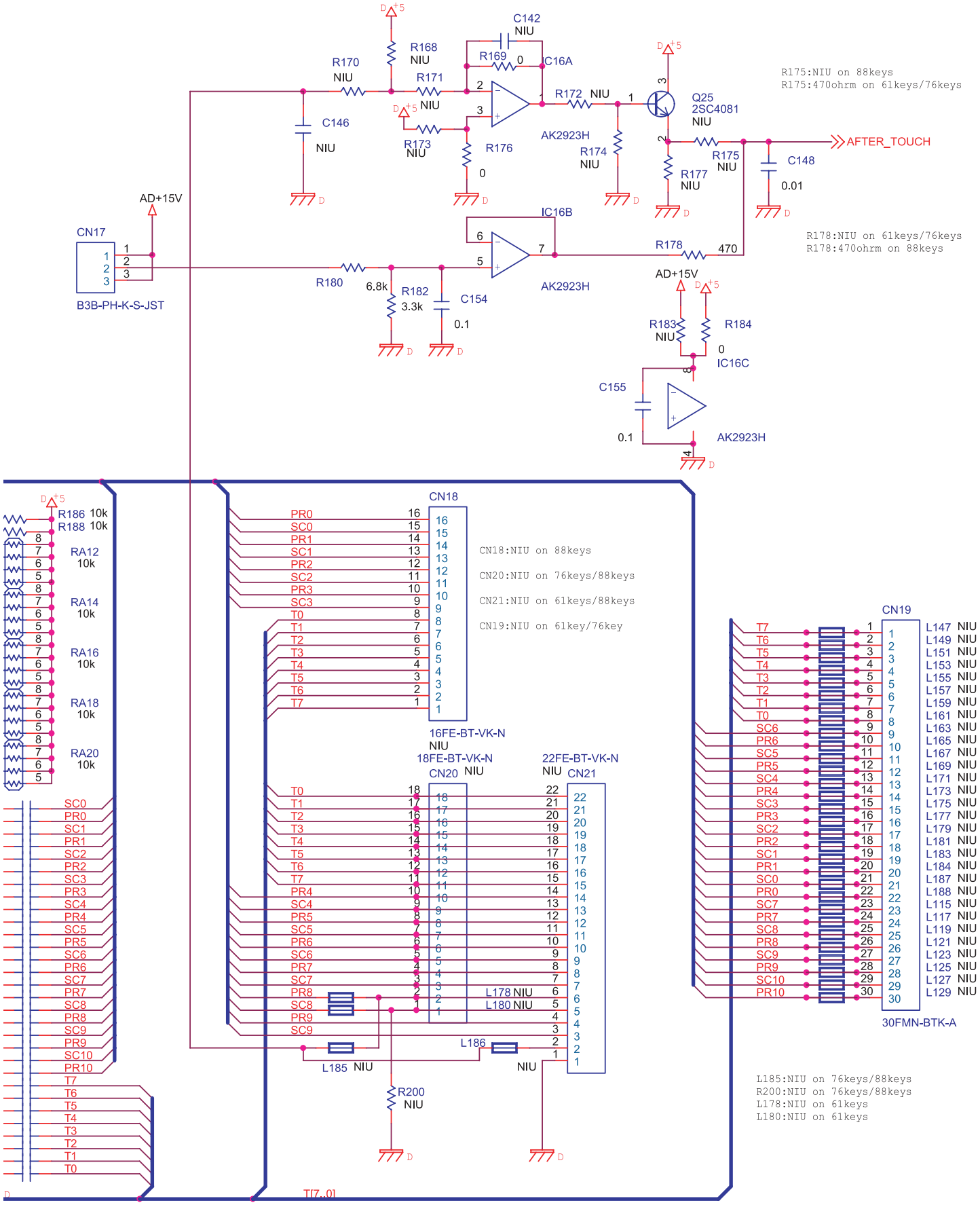



C142
0.1
R168
220k
R169
27k
IC16A
R170
1k
R171
100
C146
0.1
R173
100k
R176
12k
AK2923H
R172
18k
Q25
2SC4081
R174
27k
R175
R177 470
1k
C148
0.01
AFTER_TOUCH
R175:NIU on 88keys
R175:470ohm on 61keys/76keys
AD+15V
CN17
B3B-PH-K-S-JST
NIU
IC16B
R178
NIU
R178:NIU on 61keys/76keys
R178:470ohm on 88keys
R180
NIU
R182
3.3k
C154
NIU
AK2923H
AD+15V
R183
NIU
R184
0
IC16C
C155
0.1
AK2923H
R186 10k
R188 10k
RA12
10k
RA14
10k
RA16
10k
RA18
10k
RA20
10k
CN18
16FE-BT-VK-N
CN18:NIU on 88keys
CN20:NIU on 76keys/88keys
CN21:NIU on 61keys/88keys
CN19:NIU on 61key/76key
18FE-BT-VK-N
CN20 NIU
22FE-BT-VK-N
CN21
L178 600
L180 600
L185 NIU
L186
600
R200
NIU
CN19
30FMN-BTK-A
NIU
L185:NIU on 76keys/88keys
R200:NIU on 76keys/88keys
L178:NIU on 61keys
L180:NIU on 61keys
TI[7..0]

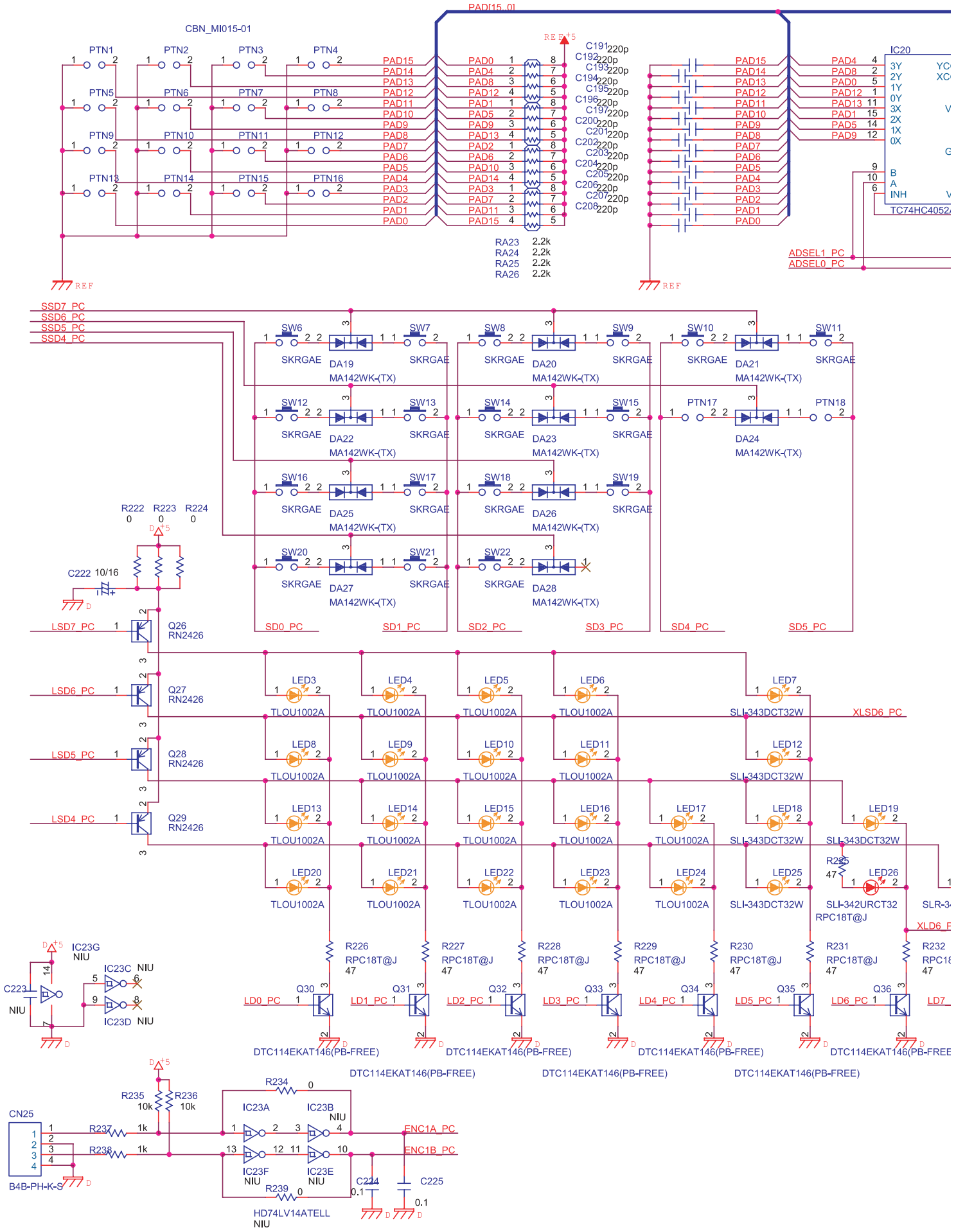
Circuit Diagram (Fantom-G8 Jack Board: 3/3)

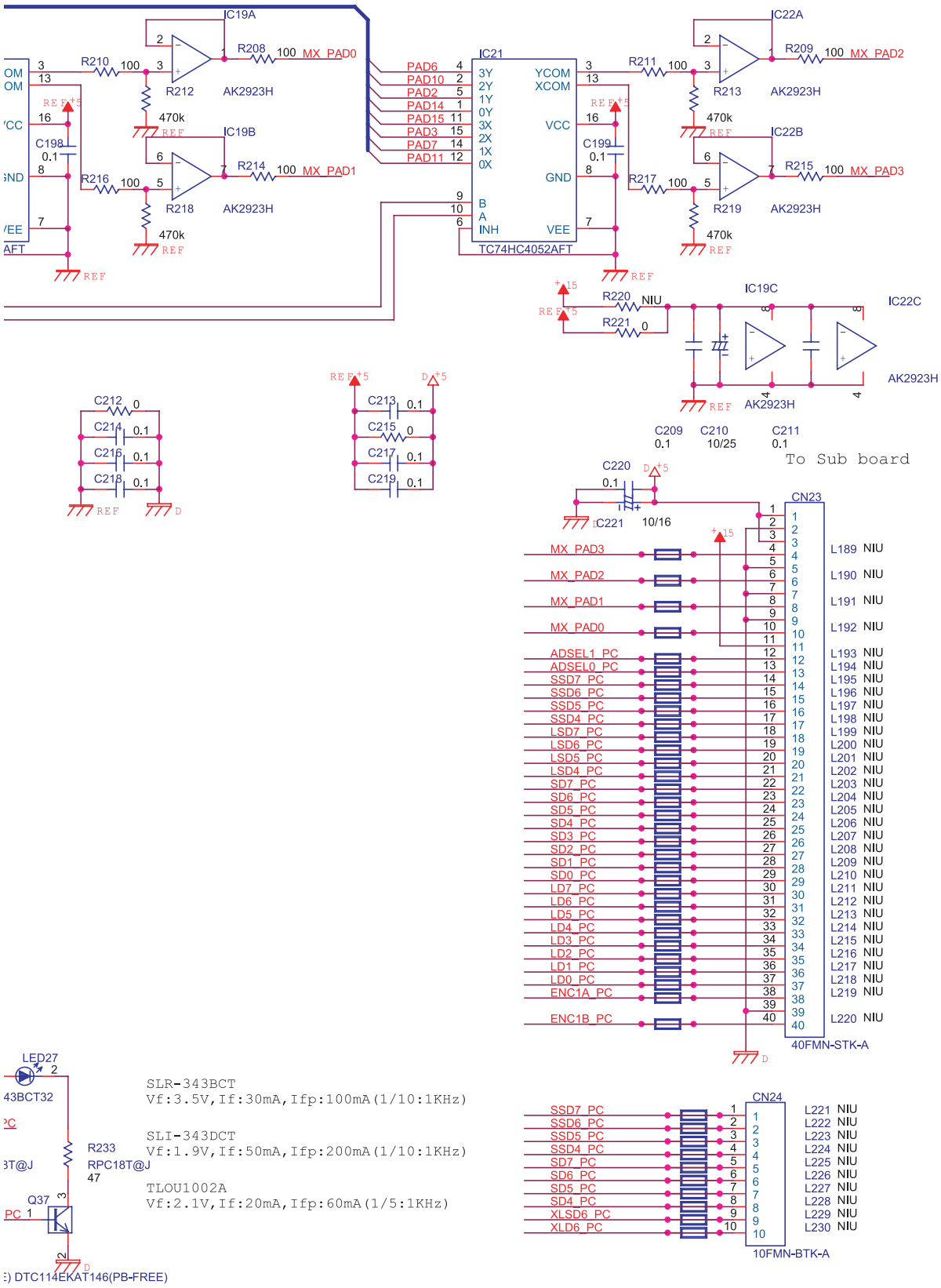
Fantom-G8



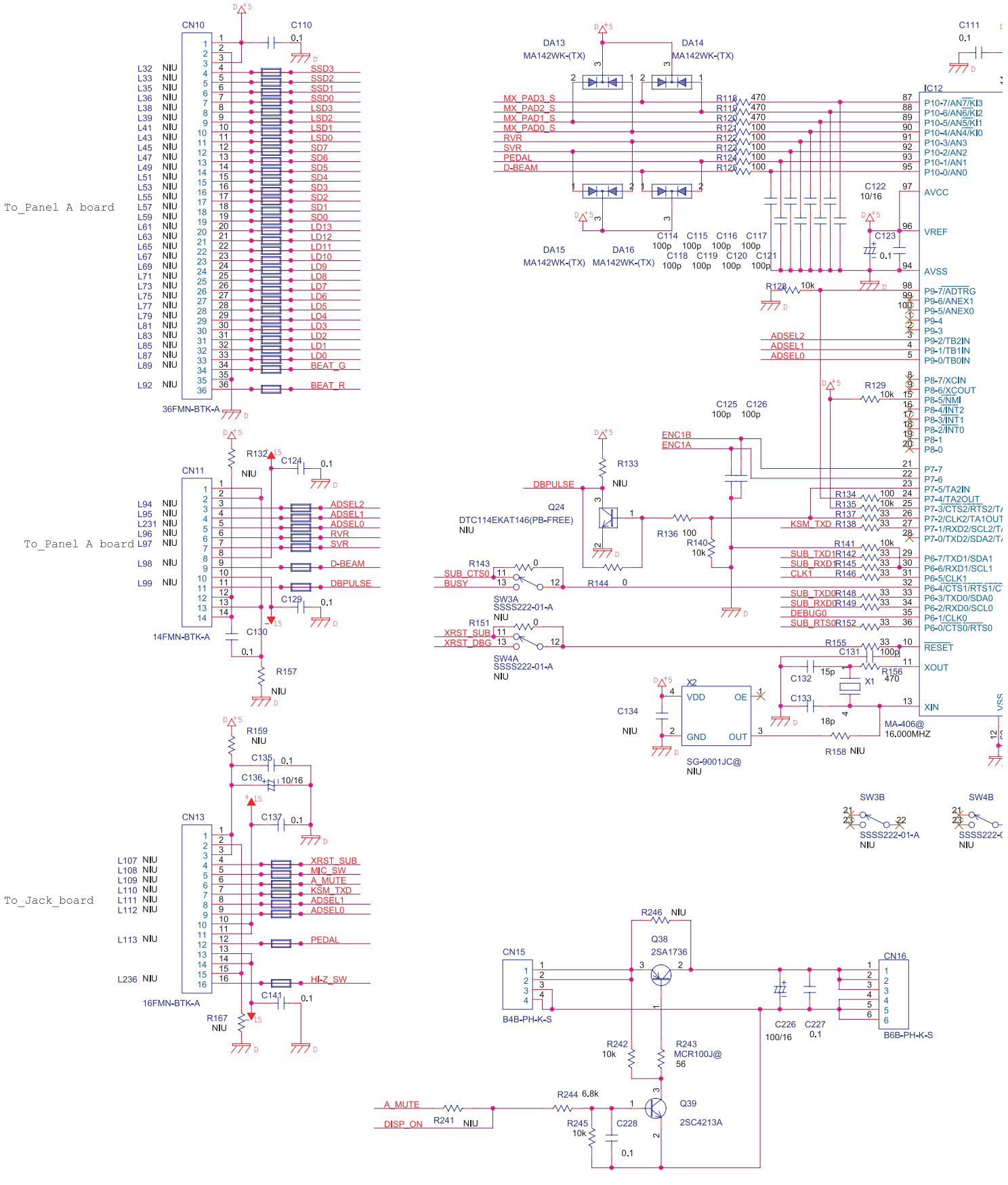

C142
NIU
R168
NIU
R169 0
C16A
R170
NIU
R171
NIU
R172 NIU
Q25
2SC4081
NIU
R175:NIU on 88keys
R175:470ohrm on 61keys/76keys
C146
NIU
R173
NIU
R176
0
AK2923H
R174
NIU
R175
NIU
R177
NIU
C148
0.01
AFTER_TOUCH
AD+15V
CN17
B3B-PH-K-S-JST
IC16B
R178
470
R178:NIU on 61keys/76keys
R178:470ohrm on 88keys
R180
6.8k
R182
3.3k
C154
0.1
AK2923H
AD+15V
R183
NIU
R184
0
IC16C
C155
0.1
AK2923H
R186 10k
R188 10k
RA12
10k
RA14
10k
RA16
10k
RA18
10k
RA20
10k
CN18
CN18:NIU on 88keys
CN20:NIU on 76keys/88keys
CN21:NIU on 61keys/88keys
CN19:NIU on 61key/76key
16FE-BT-VK-N
NIU
18FE-BT-VK-N
CN20 NIU
22FE-BT-VK-N
NIU CN21
CN19
30FMN-BTK-A
L178 NIU
L180 NIU
L185 NIU
L186
NIU
R200
NIU
L185:NIU on 76keys/88keys
R200:NIU on 76keys/88keys
L178:NIU on 61keys
L180:NIU on 61keys
TI7..01

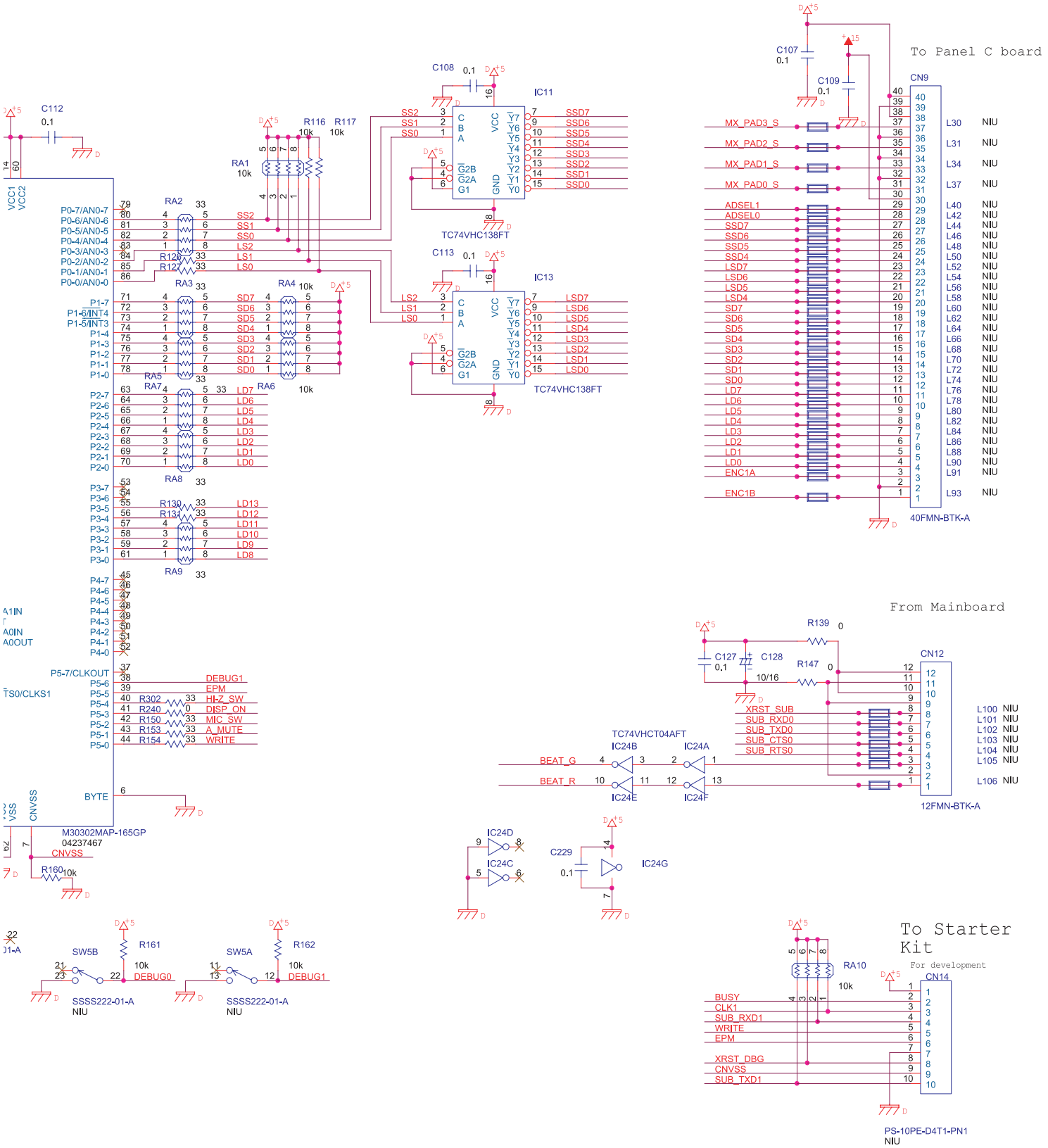
Circuit Diagram (Panel-R Board)



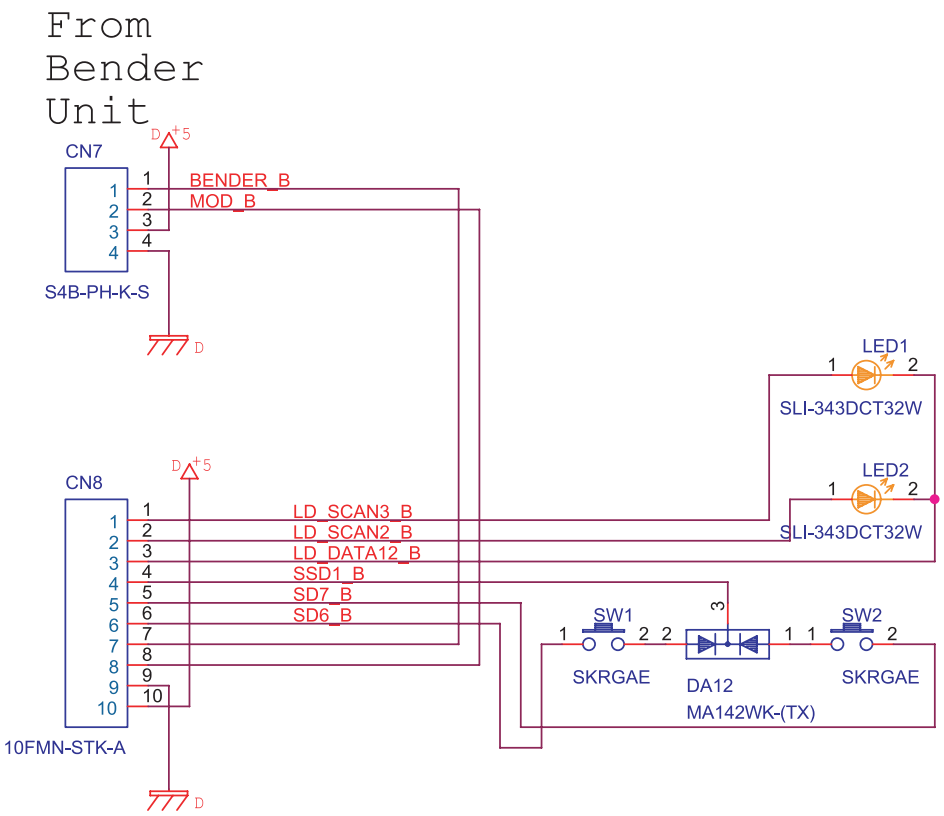

IC19A
IC19B
IC21
IC22A
IC22B
IC19C
IC22C
R208 100 MX_PAD0
R209 100 MX_PAD2
R214 100 MX_PAD1
R215 100 MX_PAD3
R210 100
R211 100
R216 100
R217 100
R212 AK2923H
R213 AK2923H
R218 AK2923H
R219 AK2923H
470k
PAD6 PAD10 PAD2 PAD14 PAD15 PAD3 PAD7 PAD11
3Y 2Y 1Y 0Y 3X 2X 1X 0X
YCOM XCOM VCC GND VEE
B A INH
TC74HC4052AFT
C198 0.1
C199 0.1
R220 NIU
R221 0
AK2923H
REF
+15
+5
D
C212 0
C214 0.1
C216 0.1
C218 0.1
C213 0.1
C215 0
C217 0.1
C219 0.1
C209 0.1
C210 10/25
C211 0.1
To Sub board
C220 0.1
C221 10/16
CN23
MX_PAD3
MX_PAD2
MX_PAD1
MX_PAD0
ADSEL1_PC
ADSEL0_PC
SSD7_PC
SSD6_PC
SSD5_PC
SSD4_PC
LSD7_PC
LSD6_PC
LSD5_PC
LSD4_PC
SD7_PC
SD6_PC
SD5_PC
SD4_PC
SD3_PC
SD2_PC
SD1_PC
SD0_PC
LD7_PC
LD6_PC
LD5_PC
LD4_PC
LD3_PC
LD2_PC
LD1_PC
LD0_PC
ENC1A_PC
ENC1B_PC
L189 NIU
L190 NIU
L191 NIU
L192 NIU
L193 NIU
L194 NIU
L195 NIU
L196 NIU
L197 NIU
L198 NIU
L199 NIU
L200 NIU
L201 NIU
L202 NIU
L203 NIU
L204 NIU
L205 NIU
L206 NIU
L207 NIU
L208 NIU
L209 NIU
L210 NIU
L211 NIU
L212 NIU
L213 NIU
L214 NIU
L215 NIU
L216 NIU
L217 NIU
L218 NIU
L219 NIU
L220 NIU
40FMN-STK-A
LED27
43BCT32
SLR-343BCT
Vf:3.5V,If:30mA,Ifp:100mA(1/10:1KHz)
SLI-343DCT
Vf:1.9V,If:50mA,Ifp:200mA(1/10:1KHz)
R233
RPC18T@J
47
TLOU1002A
Vf:2.1V,If:20mA,Ifp:60mA(1/5:1KHz)
Q37
DTC114EKAT146(PB-FREE)
CN24
SSD7_PC
SSD6_PC
SSD5_PC
SSD4_PC
SD7_PC
SD6_PC
SD5_PC
SD4_PC
XLSD6_PC
XLD6_PC
L221 NIU
L222 NIU
L223 NIU
L224 NIU
L225 NIU
L226 NIU
L227 NIU
L228 NIU
L229 NIU
L230 NIU
10FMN-BTK-A

Circuit Diagram (Sub CPU Board)

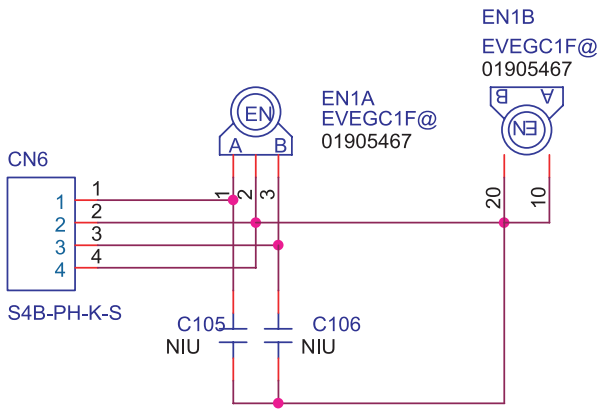



To Panel C board
CN9
40FMN-BTK-A
From Mainboard
CN12
12FMN-BTK-A
To Starter Kit
For development
CN14
PS-10PE-D4T1-PN1
NIU
M30302MAP-165GP
04237467
IC11
IC13
TC74VHC138FT
TC74VHCT04AFT
SSS222-01-A
SW5B
SW5A
RA1
RA2
RA3
RA4
RA5
RA6
RA7
RA8
RA9
RA10
R116
R117
R130
R131
R139
R147
R160
R161
R162
C107
C108
C109
C112
C113
C127
C128
C229
MX_PAD3_S
MX_PAD2_S
MX_PAD1_S
MX_PAD0_S
ADSEL1
ADSEL0
ENC1A
ENC1B
BEAT_G
BEAT_R
XRST_SUB
SUB_RXD0
SUB_TXD0
SUB_CTS0
SUB_RTS0
BUSY
CLK1
SUB_RXD1
WRITE
EPM
XRST_DBG
CNVSS
SUB_TXD1
DEBUG0
DEBUG1
HI-Z_SW
DISP_ON
MIC_SW
A_MUTE
WRITE
BYTE

Circuit Diagram (Bender SW Board)



Circuit Diagram (Encoder Board)



MEMO